

ISSN: (2788-5704)  
ISSN: (2788-726X)

J Farkhanda Inst Nurs Pub Health  
January - June 2022  
Vol. 02, No. 01



# JOURNAL OF FARKHANDA INSTITUTE OF NURSING AND PUBLIC HEALTH

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Canal Road, University Town  
Peshawar, Pakistan  
Tel: +92-91-5619671-6  
+92-91-5711151-3  
Fax: +92-91-5844428

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## SKILLED NURSING FACILITIES: THE MISSING PILLARS OF THE HEALTH CARE SYSTEM IN PAKISTAN

Afsha Awal Khan  
Principal  
Farkhanda Institute of Nursing, Peshawar

The recent COVID-19 pandemic highlighted the loopholes in the health care system across the world. In developing countries, expenditure on health care is comparatively very low and the health care system is continuously under experiment, the concept of managed health care is still a dream.<sup>1</sup> Burden is always in tertiary health care settings. In Pakistan, major teaching hospitals serve as primary and secondary healthcare facilities as primary healthcare centers are not fully functional. Consequently, tertiary hospitals always have a shortage of beds for acute conditions because it takes patients from one end and is not able to release patients at a similar rate.<sup>2</sup>

The major reason for this is a missing pillar called „skilled nursing facility or „nursing homes. A skilled nursing facility can accommodate patients who are in transition of care and do not require hospitalization as well as are not able to be shifted to homes safely. Therefore, governments should not only functionalize primary and secondary health services to decrease admissions rates in tertiary care hospitals<sup>3</sup> but should also focus on the development of skilled nursing facilities and nursing homes. This will ease the transition of care from hospital to home, it will also decrease the length of stay and improve bed occupancy in acute care settings.<sup>4</sup>

According to the Pakistan Nursing Council (Amendment) Act, 2020, the scope of services for specialized nurses and Advanced Nurse Practitioners is extended to prescription with an advanced level of education and competence. Master qualified Nurses with advanced specialized patient management knowledge and skills can lead and run nursing homes or skilled nursing facilities. Evidence suggests that the contribution of nurses in advanced practice in specialized care settings not only increases the level of patient satisfaction with care and treatment, but it also decreases the average length of stay, and mortality rate.<sup>5</sup> The cost of skilled nursing homes as compared to acute hospital beds is less than thirty per cent which means it may positively affect health care economics along with the provision of quality and safe care.<sup>6</sup>

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## SIDE EFFECTS OF COVID-19 VACCINES AMONG THE VACCINE RECIPIENTS OF KHYBER PAKHTUNKHWA, PAKISTAN

Amir Sultan<sup>1</sup>, Sheraz Khan<sup>2</sup>

### **ABSTRACT**

### **OBJECTIVES**

*To determine the side effects of vaccination among covid 19 vaccine recipients in Khyber-Pakhtunkhwa Pakistan.*

### **METHODOLOGY**

*A cross-sectional descriptive study was conducted from 15 September to 15 November 2021 in Khyber Pakhtunkhwa. A sample of 262 participants was selected after designing an online questionnaire for data collection among those individuals who received covid vaccines such as Sinovac, Sino Pharm, Pfizer, Moderna, AstraZeneca, and Sputnik-V.*

### **RESULTS**

*Among 262 participants 150 (57%) reported side effects, whereas 112 (43%) individuals don't report side effects. The most frequent side effects of covid-19 vaccination were fever 113 (69.3%), Body ache 73 (44.8%), headache 66 (40.5%), Dizziness 66 (40.5%), Muscle pain in 58 (35.6%), Fatigue 54 (33.1%) and tiredness 38 (23.3%).*

### **CONCLUSION**

*The study confirmed that the selected six vaccines cause side effects, but their intensity is mild, vaccines may cause severe side effects but in rare conditions. The common side effect that occurs after vaccinations are the responsibility of our immune system, which indicate their strength against microorganism.*

**KEYWORDS:** SARS-CoV-2, COVID-19, Vaccine Hesitancy, Side Effects, Vaccination

#### **How to cite this article:**

Sultan A, Khan S. Side Effects of COVID-19 Vaccines among the Vaccine Recipients of Khyber Pakhtunkhwa, Pakistan. J Farkhanda Inst Nur Pub Health. 2022;2(1): 2-8

#### **Correspondence**

<sup>1</sup>Amir Sultan, Registered Nurse, Saidu Group of Teaching Hospital Swat  
 ☎: [nursingwithamir@gmail.com](mailto:nursingwithamir@gmail.com)  
 ☎: +92-343-8987807  
<sup>2</sup>Registered Nurse, Bacha Khan Medical Complex Sawabi

### **INTRODUCTION**

In December 2019 patient with an unknown diagnosis was received in the hospitals of Wuhan province of China having symptoms like flu, later

the expert identified this newly developed human virus and named it covid-19, a disease caused by the novel coronavirus SARS-CoV-2 virus. The rate of the covid-19 rate increased very rapidly in no time, and the world health organization declared it a pandemic on 11 March 2020.<sup>1</sup> The people became a witness to this pandemic that stop the global market and make people restricted to their homes. Currently, 255 million people became infected with covid-19 and 5.9 million people have lost their lives worldwide.<sup>2</sup> Pakistan is one of the

heavily populated developing countries in Asia, and it has been seriously at risk of this pandemic. The lack of resources in the health system and the economy of the country were unable to handle this huge burden, so a quick and effective response was the need of time to restrict the spread of this virus to save the country from a disaster. The formation of the National command and control center, the smart lockdowns in infected areas, restrictions on public transport, border controls, closing of institutes, and ban on public gathering were extraordinary actions taken by the government of Pakistan on time. Pakistan till now faces 4 waves of covid-19, the total cases of covid-19 in Pakistan are 1.28 million and 28,638 have lost their lives.<sup>3</sup> In Khyber Pakhtunkhwa there were many covid-19 cases (n=179000) and 5809 died due to covid-19.<sup>4</sup> The world health organization was guided regarding preventive measures and guidelines to stop the spread of covid-19 but there was still a question in the mind of people whether this will be treated or it will be prevented? Yet as there is no approved antiviral treatment for covid-19, with the hope to control this pandemic several vaccines development was initiated.<sup>5</sup> In July 2020 news regarding vaccination was released from multiple pharmaceutical companies and governments that soon covid-19 vaccine will be on the market. The news of vaccination has brought hope to people and after the final approval of the Food and Drug Administration (FDA), Pfizer became the first approved covid-19 vaccine.<sup>6</sup> Worldwide the covid-19 vaccination program became initiated, Pakistan received the Covid-19 vaccination 1<sup>st</sup> consignment on 8 February 2021 when the China people's liberation army gifted 500,000 doses to arm forces of Pakistan and the arm forces donate it to the public of Pakistan.<sup>7</sup> The first consignment vaccine of the Sino pharm was administered to front line health workers of the hospitals. Protocol of vaccines administration was set by the National command and control center (NCOC), only Pfizer vaccines for the age group of 15-18 years, 18 years and above should administer Sino pharm, Sinovac, Moderna, sputnik-v and later Cansino, and AstraZeneca for 40 years and above<sup>8</sup> In Pakistan 78,654,489 received the first dose and 48.7 million people are fully vaccinated so far which is 22.1% of the population.<sup>9</sup> More than 8 million doses of COVID-19 vaccines have arrived in Pakistan through COVAX so far, and more are on the way, this includes 2.4 million doses of AstraZeneca, 100,160 doses of Pfizer, and 5.5 million doses of Moderna, the latter donated by the United States under COVAX<sup>10</sup> dose-sharing mechanism.<sup>3</sup>

According to the center for diseases control and prevention (CDC) that after vaccination the side effects are normal and it indicates that the body is producing protection.<sup>10</sup> Common side effects are fever, headache, muscle pain, nausea, and chills. Millions of people received covid-19 vaccination so the side effects are very rare and it should be monitored and reported by the national health services.<sup>11</sup> In April 2021 from Moderna and Pfizer, some male youth and adults developed myocarditis and pericarditis which was mild and resolved quickly in the United States reported by the center for diseases control and prevention.<sup>12</sup> In Pakistan, covid-19 vaccines have caused milder side effects like headache, fever, and pain on injection sites.<sup>13</sup> Sino pharm (China), Sinovac (China), Pfizer (BioNTech-USA), Moderna (NIAID-USA), AstraZeneca (Oxford), and sputnik-V (Russian) used so far in Pakistan, multiple side effects have been observed therefore it is necessary to collect data from the vaccine recipient regarding side effects.

## METHODOLOGY

A cross-sectional descriptive study was conducted from 15 September 2021 to 15 November 2021 in Khyber Pakhtunkhwa Pakistan. The population was people who received covid-19 vaccination of Sino pharm, Sinovac, AstraZeneca, Moderna, Pfizer, or Sputnik-V. The sample size was 262. A purposive sampling technique was used. Those people who received new vaccines (Janssen, Novavax, Covaxin, and Cansino), who visit a foreign country after vaccination and those who are not willing to share their information were excluded from the study. A questionnaire was developed based on Section A, B, and C. Section A contain demographic data like (Age, education, and marital status), and Section B contains the medical and surgical history of participant like (Chronic illness, history of hospitalization, surgery, and allergies) and Section-C was about the knowledge and side effects of covid-19 side effects like (fever, shivering, body ache, lethargic, swelling and pain at injection site, alteration in sleep pattern or changes in heart rate). A trial version of the questionnaire was designed based on the side effects reports after covid-19 vaccination, then the content of the questionnaire was discussed with 5 health educator nurses, and 5 intensive care clinical nurses, and intensive care specialists. The modification was made on their recommendation for content validity. A pilot study was conducted on 20 participants who received covid-19

vaccination for internal consistency to determine the reliability of the questionnaire, the Cronbach alpha of the questionnaire was 0.86. The data was collected through Google form and later it was converted to a Microsoft Excel spreadsheet for data analysis.

## RESULTS

Most of the participants 225 (85.4%) were males.

Vaccines recipients from 17 districts of Khyber Pakhtunkhwa participated in this study. The age of the participants was from 18 to 50 years. Majority of the participants in the study are the recipient of Sino pharm and Sinovac vaccines. The quantity of Sinovac recipient is 40% (n=105), Sino pharm 34% (n=88), Pfizer 11% (n=30), AstraZeneca 7% (n=19), Moderna 6% (n=15) and sputnik-V 2% (n=5).

Table 1: Demographic Characteristics of the Participants.

Variables	Male n=225 (85.4%)	Female n=37(14.6%)	Participants n=262
Districts	Malakand	4	4 (1.5%)
	Swat	154	170 (64.9%)
	Buner	20	22 (8.4%)
	Lower Dir	14	15 (5.7%)
	Mardan	6	11 (4.2%)
	Nowshera	3	6 (2.3%)
	Peshawar	3	7 (2.7%)
	Shangla	4	4 (1.5%)
	Swabi	6	7 (2.7%)
	Bara	1	2 (0.8%)
	Battagram	1	1 (0.4%)
	Kohat	0	1 (0.4%)
	Muhammad Agency	1	1 (0.4%)
	Bajaur	2	2 (0.8%)
	Canada	2	3 (1.1%)
	Chitral	2	4 (1.5%)
	Karak	2	2 (0.8%)
	Less than 20 years		39 (14.9%)
Age	20 years to 29 years		170 (64.9%)
	30 years to 39 years		43 (16.4%)
	40 years to 49 years		8 (3.1%)
	50 years and above		2 (0.8%)
	No Education		2 (0.8%)
Educational level	Primary School		2 (0.8%)
	Middle school		3 (1.1%)
	High school		32 (12.3%)
	Graduation Degree /Diploma / technical training		177 (67.8%)
	Post-graduation		46 (17.6%)
Marital Status	Single		166 (63%)
	Married		78 (30%)
	In Relation		18 (7%)

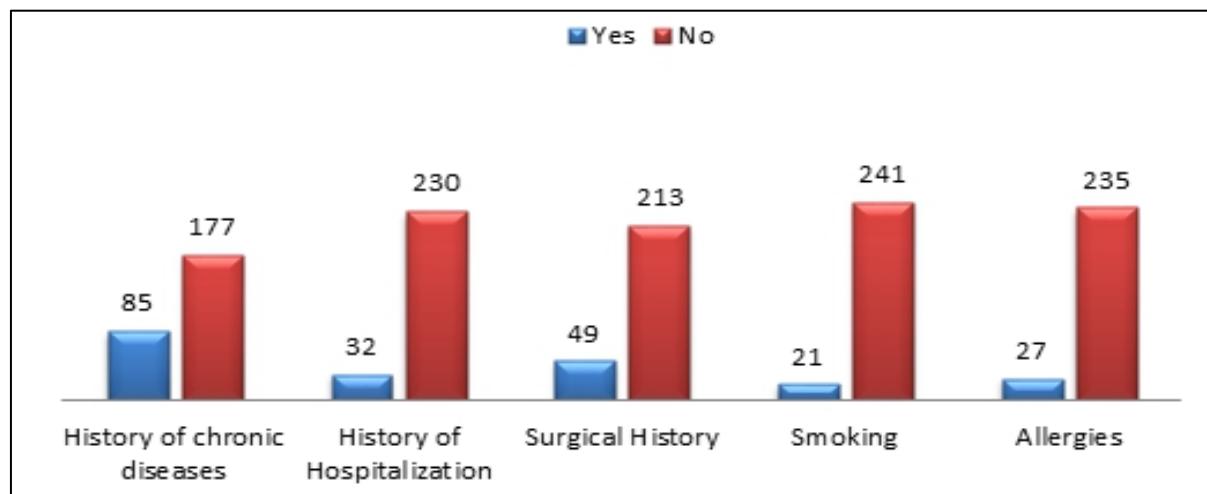


Figure 1: Past, Medical, Surgical, and Hospitalizations History

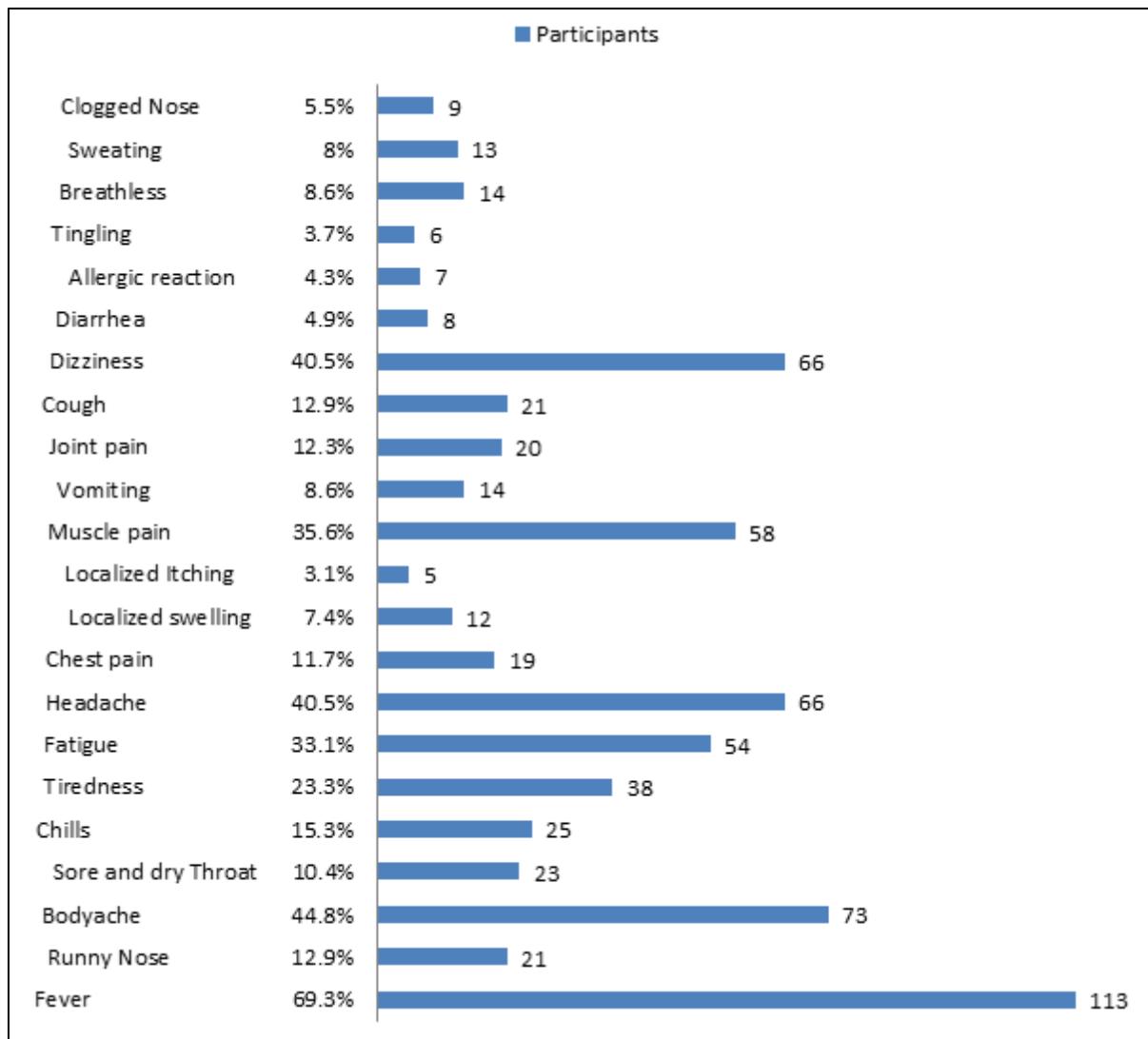


Figure 2: Side Effects of Covid-19 Vaccination

Table 2: Most Common Side Effects of the Vaccination

S.No	Vaccine	SampleSize	1 <sup>st</sup> Common Side Effect	2 <sup>nd</sup> Common Side Effect	3 <sup>rd</sup> Common Side Effect
1	Sinovac	105	Fever in 50 participants	Myalgia in 28 participants	Body ache in 26 participants
2	Sino pharm	88	Fever in 35 participants	Body ache in 26 participants	Headache in 23 participants
3	Pfizer	30	Fever in 12 participants	Body ache in 4 participants	Myalgia in 2 participants
4	AsterZeneca	19	Fever in 9 participants	Body ache in 4 participants	Myalgia and runny nose in 2 participants
5	Moderna	15	Fever in 10 participants	Body ache in 9 participants	Myalgia in 2 participants
6	Sputnik-V	5	Fever in 1 participant	Body ache in 1 participant	Myalgia in 1 participant

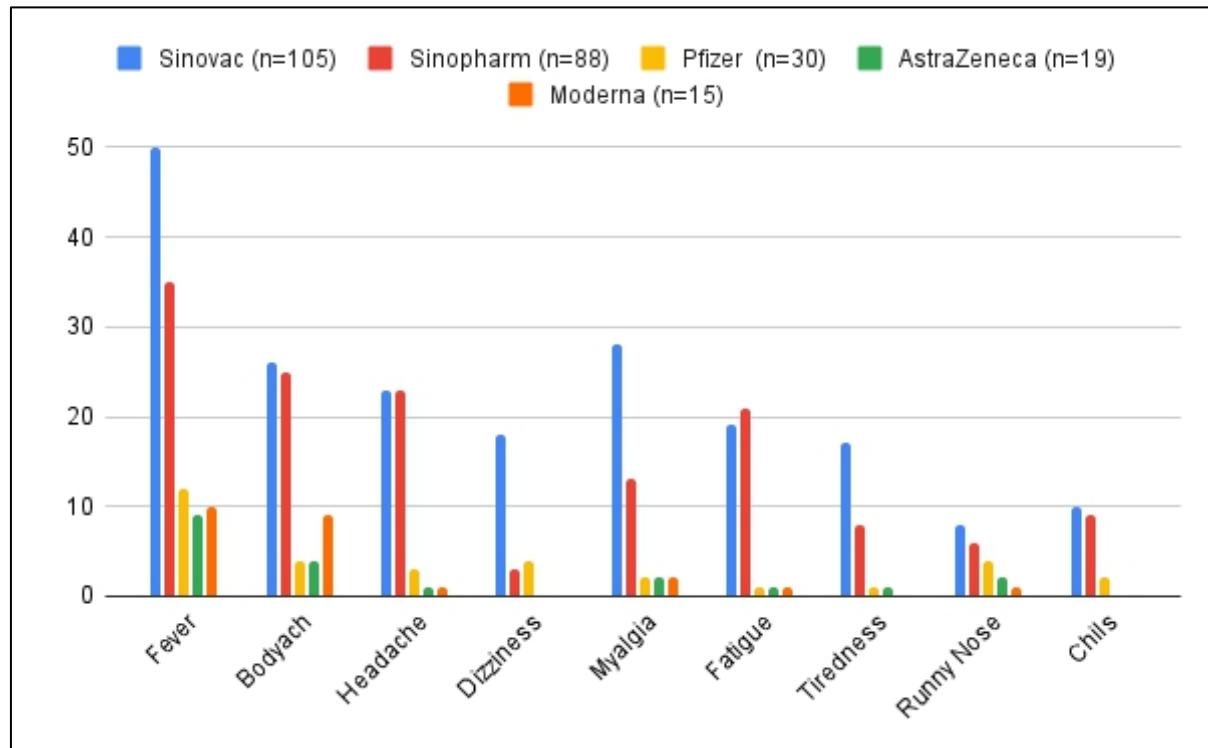


Figure 3: Comparing Common Side Effects of Different Covid-19 Vaccination

## DISCUSSION

Pakistan has the 5<sup>th</sup> biggest populated country in the world; therefore, the chances of the catastrophe were high, but the country's administration dealt very well with covid-19. In February 2021 covid-19 vaccination was received from China and then the campaign of vaccination administration became faster and faster. In this study, the most common side effects received from all vaccination were fever, myalgia, headache, and body ache. All over the world, the side effects of covid-19 Vaccination are reported, therefore Selection and administration of covid-19 vaccination seemed difficult. The side effects of myocarditis have been reported at a maximum number than expected rates in adults and adolescents who have received an mRNA COVID-19 vaccine (BNT162b2 or mRNA-1273) in the United States and Israel.<sup>14,15</sup> After the first dose of Sino pharm vaccines, some participants have reported the known symptoms from vaccination but after the second dose, the ratio of these symptoms decreased, and none of the symptoms was too increased that required hospitalization.<sup>16</sup> Furthermore, the side effects of injection site pain headache, flu, fever, and tiredness are also reported, the cases of bell palsy and lymph node swelling and tenderness are reported but very exceptional from Pfizer covid-19 vaccination.<sup>17</sup>

Similarly the tenderness and local pain around the injection site is the most commonly reported side effects, which report and last for one day.<sup>18</sup> In the United States common side effects like soreness, fatigue, myalgia, headache, chills, fever, joint pain, nausea, muscle spasm, sweating, dizziness, flushing, feelings of relief, brain fogging, anorexia, localized swelling, decreased sleep quality, itching, tingling, diarrhea, nasal stuffiness, and palpitations are also reported from Pfizer covid-19 vaccination.<sup>19</sup> In a study conducted in Turkey by Riad and others, the results show that injection site pain (41.5%), fatigue (23.6%), and headache (18.7%) were reported.<sup>20</sup> The peoples who are vaccinated with AstraZeneca have more systematic side effects comparing Pfizer vaccines.<sup>21</sup> Vaccine hesitancy is also a factor where people do not vaccinate themselves and put all the people in danger in their surroundings. In our study, 33% (n=86) were scared before the administration of the covid-19 vaccine, while In New York, approximately 29% of residents claimed that they will refuse a vaccine, compared with 20% of Canadian residents, and 6% of residents in the United Kingdom.<sup>22,23</sup> This study's findings will assist health care providers, researchers, and the public in getting the safe vaccinations with no tension as it carries minimal side effects in the population of Pakistan.

## LIMITATIONS

This study has several methodological limitations such small sample, non-probability sample, unequal groups and only a descriptive level of analysis.

## CONCLUSION

The common side effects which occur after the administration of the covid-19 vaccination are fever, headache, body ache, chills, fatigue, tiredness, myalgia, local site swelling, tenderness at the injection site, and shortness of breath and dizziness. These common side effects remain for a short period and are relieved through bed rest and self-medication. The rare side effects which cause long-term illness are alteration in sleep pattern, changes in heart rate, and eyesight. Furthermore, a deep analysis regards each vaccination can elaborate detailed figures.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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### CONTRIBUTORS

1. **Amir Sultan** - Concept Design; Data Analysis/Interpretation; Drafting Manuscript; Final Approval
2. **Sheraz Khan** - Data Acquisition; Critical Revision; Supervision

## FACTORS INHIBITING STAFF NURSES FROM ACTIVATION OF RAPID RESPONSE TEAM IN PRIVATE TERTIARY CARE HOSPITAL ISLAMABAD PAKISTAN

Sajjad Ahmad<sup>1</sup>, Abdul Rahim Khan<sup>2</sup>, Muhammad Ali<sup>3</sup>, Khizer Hayat<sup>4</sup>, Muhammad Sabir<sup>5</sup>,  
Adil Shehzad Lughmani<sup>6</sup>, Khalida Parveen<sup>7</sup>

### **ABSTRACT**

#### **OBJECTIVES**

*This study aimed to explore the contributing factors which inhibit the role of nurses in the activation of a rapid response team system in a tertiary care hospital.*

#### **METHODOLOGY**

*A qualitative exploratory study was carried out using focused group discussion in a private tertiary care hospital. The nurse's viewpoint was determined regarding the increased frequency of Cardiopulmonary Arrests in 2018 as compared to 2017 in the hospital setting. Data were thematically analyzed.*

#### **RESULTS**

*Nurses described rapid response teams as "the team comprising of different healthcare professionals equipped with lifesaving resources to patients who need immediate medical care to prevent health deteriorations or the need of intensive care. There is a "Red Flags" criteria established in the hospital setting to activate the RRT system resulting in the quick arrival of a skilled ICU team with needed resources.*

#### **CONCLUSION**

*Many factors hinder the activation of the Rapid Response Team such as Knowledge about the Rapid Response team, role and responsibility confusion about RRT activation, peer pressure, lack of management support.*

**KEYWORDS:** Challenges, Nurses, Rapid response team, Cardiopulmonary Arrest

**How to cite this article:**

Ahmad S, Khan AR, Ali M, Hayat K, Sabir M, Lughmani AS, Parveen K. Factors Inhibiting Staff Nurses from Activation of Rapid Response Team in Private Tertiary Care Hospital Islamabad, Pakistan. J Farkhanda Inst Nur Pub Health. 2022;2(1): 9-14

**Correspondence**

<sup>1</sup> Sajjad Ahmad, Assistant Professor (Nursing) Principal of the Institute of Health Sciences School of Nursing Mardan

✉: [sajjad2010.024@gmail.com](mailto:sajjad2010.024@gmail.com)

☎: +92-333-5632554

<sup>2</sup> Academic Director, The Quaid-E-Azam Institute of Nursing & HS Swabi

<sup>3</sup> Critical Care Nurse, Pakistan Institute of Medical Sciences (PIMS), Islamabad

<sup>4</sup> Associate Clinical Nurse Manager, Shifa International Hospital, Islamabad

<sup>5</sup> Managing Director, The Quaid-E-Azam Institute of Nursing & HS Swabi

<sup>6</sup> Nursing Lecturer, Wah Nursing College Wah Cantt

<sup>7</sup> Critical Care Nurse, NICE, Pakistan Institute of Medical Sciences (PIMS), Islamabad

#### **INTRODUCTION**

The rapid response team is an emerging concept in the health care system; it began in the 19<sup>th</sup> century in Australia to improve patient outcomes before the patient reaches the Intensive care unit.<sup>1</sup> This initiative has acquired the highest degree of recognition globally in less than two decades and the health care organizations put the concept into clinical practice to enhance patient safety for certain developing medical emergencies to minimize unplanned ICU transfer, and cardiac arrest and unexpected deaths within the hospitals. This concept was incorporated in 2008 into the

Joint Commission's National Patient Safety Goals, and nowadays many hospitals are running rapid response team systems.<sup>2</sup> RRT is worthless if not activated timely; for the same reason teaching and training of the nurses have been considered a positive factor to improve the identification of the worsened condition of the patient, as well as promoting the patient safety culture within the organization<sup>3</sup>. There are several factors have been affecting the nurses' enthusiasm to initiate the RRT system; including incapability, lack of support by medical and nursing professionals, nurses' less awareness of the situation and the nurses' workloads.<sup>4,5,6</sup> Study conducted in Pakistan revealed that only 30% of nurses initiated the rapid response systems and rest of the 70% initiation was led by ward doctors. There is a need to find out the reasons behind this minimal involvement because activation of the rapid response team is an entirely the nurse-driven process.<sup>7,8,9</sup> Moreover, it was reported to the Chairman Rapid Response Team (RRT) Committee of the Shifa International Hospital (SIH), that the data of the last few months revealed an increase in the frequency of Code Blue, and a decrease in the frequency of RRT which is against the outcome of RRT because the goal of RRT is to reduce the numbers of code blue and here the results were reciprocal. Nurses are the key performer in the initiation and successful lifesaving processes in the hospital settings. Without knowing the factors which directly or indirectly restrict nurses, from acting in the process of RRT, then there is no use in just running the concept of RRT in any of the hospitals. If one can come up to know and address the factors and challenges that restrict nurses from initiation of RRT, the safety and satisfaction of the patients can be enhanced. Although studies addressed the achievements and impact of RRT on patient care, there is a dire need to address the challenges and contributing factors that don't let the nurses initiate the RRT system, which is a lifesaving process. If we come up to know and address the factors and challenges that restrict nurses from initiation of RRT, staff and patients' satisfaction can be enhanced and maintained. Therefore, the purpose of the study is to explore the challenges and contributing factors that restrict staff nurses from acting in a rapid response team in Shifa International Hospital (SIH) Islamabad, Pakistan. Results of this study will be shared with higher nursing and corporate management to run RRT from the core values to provide cost-effective quality medical and nursing care to patients.

## METHODOLOGY

A qualitative exploratory study design was chosen to determine the contributing factors which inhibit nurses to initiate the process of RRT because this method allows study participants to share their fullest expression regarding a subject.<sup>8</sup> Data from participants were collected via focused group discussion. Data was collected after the initial approval of the institutional review board as well as from the hospital administration was granted before the collection of the data. Informed consent of the participants was sought before data collection. All the participants were selected from SIH, Islamabad Pakistan because this hospital has had an established RRT system since 2015. Interested participants were gathered in a conference room for a focused group discussion to explore contributing factors and challenges faced by ward nurses, which prevent them to initiate RRT. Eleven nurses were selected using purposive sampling who have a valid Pakistan Nursing Council and working in adult medical and surgical inpatient wards for at least 12 months. Nurses working in critical care areas, Outpatient departments, Operation rooms and Emergency rooms were excluded from the study. To ensure confidentiality, data was collected in a separate room, and the recorded data will never be shared with anyone except the concerned. Data were analyzed by using the process of thematic analysis initially open codes were applied to transcripts and then data was described under main headings. Results were supplemented with quotes from participants' interviews. Credibility in the current study was ensured by following the standard aspect of data collection and analysis. Transferability in this study can be ensured by expressing these findings in a similar context and further explanation as per the study.

## RESULTS

### Knowledge about the Rapid Response Team

Upon inquiry that the hospital has a functional RRT system, all the participants stated that there is well established rapid response team (RRT) system exists in the hospital setting. The justification was given by the participants that every day three to four announcements in the internal emergency help systems are made in the hospital setting, that services of RRT are required for a particular patient. Upon asking when one should go to call for help, the answer was; that deterioration in blood pressure, heart rate, respiratory rate, changes

in the mental status of a patient or the gut feelings that indicate something is not well are the main reasons to activate the RRT system. But when the exact values of these signs and symptoms were enquired about, 9 out of 11 participants were unable to specify the ranges of the components of red flag criteria. Instead of exact values, one participant stated that

*"When a patient is unable to maintain Blood Pressure i.e., hypotension which is not responding to intravenous fluids therapy; one should go to activate the RRT system" [participant 1]*

In the response to when one should go to activate the RRT system, one of the participants stated that *"Desaturation which is not improving with supplemental oxygen therapy; actively bleeding and changes in the consciousness of the patient ..... "nurses activate RRT system when a patient needs intensive care." [ participant 5]*

Moreover, one participant said that oncology consultants had given them permission that *"nurses activate RRT system and do shift patient to ICU if RRT recommend transferring" [participant 2]*

Participants also said that when patients' attendants become furious despite knowing the medical condition of the patient; to control the situation and satisfy the attendants of the patient that healthcare workers are caring about the patient and family, one has to go for facilitation. Here one of the nurses said that

*"a patient with Do Not Resuscitate (DNR) and medical code status developed fits for which he has no previous history, meanwhile the nurse announced RRT" [participant 8]*

### **Inhibiting factors of initiation of RRT**

Nurses stated that the fear of unknown consequences inhibits them from acting on the RRT system.

one nurse stated that

*"If something went wrong then all the burden comes on the shoulders of the nurses. After that, we have to go through many stages of written investigations, so we avoid activation of RRT system" [participant 3]*

Participants were in view that the thought of clashing with doctors and medical team members let not them go to activate the RRT system. As if the nurse activates the RRT system, it might not be acceptable to medical team members.

### **Initiating the RRT system; Responsibility of the duty doctor or the nurse**

Two out of eleven nurses stated that it was the responsibility of the doctors to activate the RRT system and four were in the view that nurses spent more time with patients and provided them care so they better understand when a patient needs RRT activation. One nurse stated that

*"Nursing management has not informed nurses whether they should announce RRT or not." [participant 2]*

*"If any of both nurses or the doctors are confident on the assessment of the patient and the need of emergency help, must activate the RRT process without any further delay". [participant 6]*

*"Nurse or the doctors both equally are responsible to announce RRT activation" [participant 4].*

One of the experienced nurses expressed his feelings as

*"Nurses must have a valid reason that why RRT system was activated; for that reason, nurses must have strong assessment and knowledge regarding patient disease process." [participant 3]*

Another participant has a different view

*"It depends on the doctor to activate the RRT system or not, nurses have to inform the doctors regarding patient condition" [participant7].*

### **Pressure from nursing, physicians or any doctors not to initiate RRT**

Regarding pressure from nursing, physicians or any doctors not to initiate RRT Six nurses stated that

*"House officer doctor argues that nurses must inform them about the patient's condition and they will announce the RRT after consulting with seniors' doctors". [participant 1]*

Moreover, nurses said

*"We provide care to patients, and aware of the baseline symptoms of the patients, we should announce RRT system but it is not in the hands of nurses to activate RRT system for the last two years .....if it is in the hands of a nurse patient's safety may be enhanced". [participant4]*

Another nurse stated that "one off our PG doctor announced the RRT when I as a nurse thought it could have waited as the patient was vitally stable ..... but he did not care my sayings, and announced RRT".

Nurses also that

*"Negative points are highlighted well around the organization which de-motivates nurses leading to least interest in taking any kind of the responsibilities".[participant11]*

### Challenges to address to make nurses involved in the initiation of the RRT system

One participant stated that

*"It is a general concept that what seniors' nurses do, juniors have to follow; I think this concept should be changed now, to make the system better".*

One participant was of the view that

*"If our nursing management/hospital management become able to motivate nurses by supporting them that we are with nurses; will ultimately lead to interest development to learn skills, do assessment effectively"*

Another nurse stated that

*"As a nurse, I am not authorized to ask the doctor why you did not announce the RRT as per nursing assessment? This only should be done by senior management, but often our management doesn't do that".*

### Support from management toward nurses

Regarding Support from management for nurses' participants stated that

*"Doctors have the edge of having the support of their consultant but nurses have not; doctors back and support each other but nursing management doesn't [participant 10]"*

One of the participants stated that *"Nurses need the motivation to keep RRT running; our management must question the doctors why it was delayed in a particular scenario"*

### Possible causes for increased frequency of code blues

Nurses told that

*"Our junior doctors are unable to manage such patients, and nurses have to take permission for activation of RRT system, all this leads a patient to code blue situation". [participant 6]*

One nurse was of the point of view that

*"When the concept of RRT started in this hospital, every person including hospital management was interested in it; which decreased over time; I think it shouldn't be". [participant 8]*

Participants also said that one of the main causes of the increased number of cardiac arrests is because the priority of the wards healthcare providers is to stabilize the patient through different physicians' consultations first resulting in the delay in activation of the RRT.

### DISCUSSION

This study explored the factors that restrict staff nurses from activation of rapid response participants identified some aspects while

providing care such as knowledge of nurses regarding need and activation of RRT. A systematic review found that knowledge of staff regarding the need for RRT affects the activation of RRT.<sup>10,11,12</sup> In this study participants also reported that We can say that there is a restriction to nurses from doctors not to announce the RRT system till they assess the patient. There is role confusion among nurses and the doctors, initiating the RRT system, the responsibility of the duty doctor or the nurse; it must be clear by the medical and the nursing management at a great forum to end the hesitancy of the nurses. Studies show that there are organizational factors that hinder timely activation of RRT and Organizations need to study these delays, especially within the place of calls to masking physicians previous to RRT activations.<sup>13,14,15</sup> All the nurses were aware that doctors and nurses are equally responsible for the activation of the RRT system but the culture of the hospital promotes doctors' participation in all RRT activations. Pressure from nursing, physicians or any doctors not to initiate RRT must be dealt with sophisticated policies empowering nurses, so that nurses may start working enthusiastically in the provision of emergency care to the patients. Make nurses involved in the initiation of the RRT system for which they must be offered different refresher courses at the hospital setting. Organizations need to look at RRT activation delays specifically within the place of calls to mask health care providers previous to RRT activations. Differences among strong points corporations spotlight the want for schooling throughout specialities on the popularity of the acutely deteriorating patient.<sup>16,17,18</sup> Healthcare providers also need to be properly trained regarding the assessment of patients with medical emergencies. Furthermore, Support from management toward nurses must be seen in actions rather than verbalization. Further research is needed to study further about making the RRT system more compatible with patients by overcoming the challenges faced by nurses to fully utilize the services of the first line of defence to deal with patients to prevent deterioration of symptoms and improve patient outcomes.

### LIMITATIONS

Generalizations of results may not be possible due to the qualitative and descriptive nature of the study. The study focused on factors that inhibit from activation of the process of the RRT system, but the knowledge and the skills have not been assessed.

## CONCLUSION

Based on this study's findings it may be concluded that many factors hinder the activation of the Rapid Response Team such as Knowledge about the Rapid Response team, role and responsibility confusion about RRT activation, peer pressure, and lack of management support. These organizational factors need to be addressed by management by providing proper training and support to staff to avoid delays in future.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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## CONTRIBUTORS

1. **Sajjad Ahmad** - Concept Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval
2. **Abdul Rahim Khan** - Data Acquisition; Critical Revision
3. **Muhammad Ali** - Drafting Manuscript
4. **Khizer Hayat** - Critical Revision
5. **Muhammad Sabir** - Drafting Manuscript
6. **Adil Shehzad Lughmani** – Data Analysis / Interpretation
7. **Khalida Parveen** – Data Aquisition

## PREVALENCE OF RESPIRATORY MORBIDITY AMONG TRAFFIC POLICE IN PESHAWAR KHYBER PAKHTUNKHWA

Shah Zareen Khan<sup>1</sup>, Ahsan Ullah<sup>2</sup>, Muhammad Sabir<sup>3</sup>, Abdul Rahim Khan<sup>4</sup>, Abdur Rahim<sup>5</sup>, Iftikhar Ali Khan<sup>6</sup>, Alhajuddin<sup>7</sup>

### **ABSTRACT**

### **OBJECTIVES**

*The purpose of the study was to assess respiratory morbidity among traffic police in Peshawar, Khyber Pakhtunkhwa-Pakistan.*

### **METHODOLOGY**

*A descriptive cross-sectional study was conducted in the Peshawar among traffic police from all their traffic stations. A sample of 302 participants was taken conveniently from the stations as a cluster sample for the purpose. Data was collected through a structured questionnaire and was analyzed through SPSS Version-17 for its presentation.*

### **RESULTS**

*A total of 302 participants participated in the study. The mean age of the study population was  $40.45 \pm 6.30$  years. Almost half (49%) of the study participants belonged to the age group 35-44 years. Results further reflected that majority of the respondents (90%) were head constables and 10% (31) of them were from the grade of Assistant, Sub Inspectors, (SI) and Sub Inspectors (SI). Around 49.7% of the study participants had graduation and above and the remaining 50.3% (152) had a higher secondary qualification. Furthermore; 87 % of the participants reported that they had never used a face mask and 13 % of them had used a face mask. Respiratory morbidity reflected that the 7% of participants had a frequent cough, chronic cough (6%), phlegm (15%), chronic phlegm (12%), wheeze (4%), chronic wheeze (18%), dyspnea I (9%), while 25% of them had dyspnea II and peak flow restriction with.*

### **CONCLUSION**

*Findings of the study concluded that the Police working in traffic are very prone to get respiratory illnesses and they have a significantly higher prevalence of respiratory morbidity. Therefore periodic monitoring is encouraged to detect the problems at early stages for their treatment and better prognosis. Further Personal protective equipment needs to be used for the better prevention of the spread of respiratory disease*

**KEYWORDS:** Respiratory Diseases, Morbidity, Traffic Police, Personal Protective Equipments

**How to cite this article:**

Khan SZ, Ullah A, Sabir M, Khan AR, Rahim A, Khan IA, Alhajuddin. Prevalence of Respiratory Morbidity among Traffic Police in Peshawar Khyber Pakhtunkhwa. J Farkhanda Inst Nur Pub Health. 2022;2(1): 15-20

**Correspondence**

<sup>2</sup>Ahsan Ullah, Charge Nurse, Saidu Group of Teaching Hospital, Mingora Swat  
 ✉: ahsanfc@gmail.com  
 ☎: +92-344-2754675  
<sup>1</sup>Principal, Quaid-E-Azam College of Nursing, Swabi  
<sup>3</sup>Charge Nurse, Gajju Khan Medical College Swabi  
<sup>4</sup>Director, Quaid E Azam College of Nursing, Swabi  
<sup>5</sup>Cardiologist, CPSP Pakistan  
<sup>6</sup>Technologist, Khyber Medical University  
<sup>7</sup>Visiting Lecturer, Ismail Nursing College, Swat

**INTRODUCTION**

Health is mainly affected by environmental and occupational hazards and results in different miserable problems. Exposure to occupational hazards is very common in the fast-growing world and workers and managers collaborate with each other to use a continual improvement process to protect and promote the health, safety and well-being of all workers and the sustainability of the workplace and significant improvement of occupational risk for mortality and morbidity.<sup>1</sup> However the burden of occupational-related hazards is still a threat to cause certain diseases. More than 80% of the global burden of occupational disease is attributed to environmental and occupational health hazards.<sup>2</sup> Occupational risk factors attribute to an enormous burden of mortality and morbidity among people around the globe. These risk factors put the workers more prone to health consequences in developing countries as compared to the developed nations of the world.<sup>3</sup> Occupational lung diseases rank as one the most common work-related illnesses. Respiratory disorders are aggressively spread around the pollution and affect millions of individuals in terms of morbidity and mortality. The pattern and trend of respiratory ailments are increasing day by day among people working in various occupations and professions that put them under physical, psychological as well as financial and misery.<sup>4</sup> The global occupational disease burden is the main focus of occupational health programs worldwide. Nearly 8.1 million people die from occupational hazards around the world and the majority attributes to respiratory disorders.<sup>5</sup> Some jobs are related to hazardous exposure that causes lungs disease like textile, asbestos, steel, coal mining industries, construction workers, farmers' firefighters, spray painters and mill workers who are exposed to a range of dust, mineral particles and noxious chemicals are the some of the most affected groups.<sup>6,7</sup> Common occupational lung diseases that affect the workers are bronchial asthma, byssinosis, silicosis, pneumoconiosis, mesothelioma chronic bronchitis

etc. Various studies have shown the prevalence of byssinosis among textile workers ranges from 10.5% to 43.2%,<sup>8,9</sup> chronic respiratory morbidities among mill workers range from 7.5% to 42.66%,<sup>10,11</sup> Around 11 million cases are reported with occupational diseases globally and 1.9 (17%) million occur in Pakistan that contributes also to about 17% (0.12 million) of the mortality rate. Studies carried out in Pakistan regarding occupational lung diseases among workers have been mostly conducted among industries workers with high exposures to coal, steel and textile workers.<sup>12</sup> Pollutants from automobiles and industries are a major risk for outdoor pollution. A study conducted on street sweepers in Hyderabad found that about 8% of the workers suffered from chronic respiratory morbidities however there is not sufficient literature available regarding the same problems of respiratory concerns among the traffic police. Increasing traffic pollution in Pakistan is a major hazard for respiratory diseases and the traffic police working and performing their duties at the roadside are at higher risk for these diseases. According to the statistics 2018; Pakistan is the 35<sup>th</sup> largest vehicle user in 2018 which increases the risk for such diseases.<sup>13</sup> Rapid industrialization and urbanization have a major causes in developing countries of air pollution and airborne diseases. All these major generated pollutants are responsible for causing these acute and chronic respiratory morbidities. Exposure to air pollutants causes injury to the airway including the terminal bronchioles and causes to decrease in lung function leading to acute and chronic respiratory diseases. Air and smoke pollution are also linked to causing some adverse effects such as ischemic heart disease and cerebrovascular diseases.<sup>14</sup> The commonly respiratory symptoms associated with the traffic exposed group are bronchitis, asthma, wheezing, breathlessness and phlegm.<sup>15</sup> The traffic fumes emitted from the vehicles also cause reduced lung function among the susceptible subjects. The other factors that may contribute to and influence are meteorological conditions, vehicle volume & vehicle type. Climate change is being counted as a global environmental threat caused by people and human interventions. It is seen as the second most serious issue that the world faces and has brought about results that affect the individual adversely in all spheres of life. Therefore proper measures are needed to be taken to protect the traffic police from the respiratory ailments and their consequences.<sup>16</sup> There is a dearth of studies on the chosen topic from the Pakistani context, therefore the current study was designed to determine the prevalence of respiratory

morbidity among traffic police in Peshawar, Pakistan.

## METHODOLOGY

A cross-sectional study was conducted from July 2019 to February 2020 in several of the stations to assess respiratory morbidity among traffic police in Peshawar. A total of 302 participants participated in the study. The cluster sampling method was followed, and the participants were conveniently recruited for the study. The data was collected through a structured questionnaire and each police station was formed as a cluster. Police within the age group of 25- 54 years with one year of service in the city were included in the study (Table 1.1). Participants with a previous history of respiratory illnesses (asthma, TB, COPD) and chest injuries, surgeries, and cardiac failure before joining the job were excluded from the study. There were a total of 4 traffic police stations and 11 law and order police stations in Peshawar city. A total of four of the traffic police stations in the city were randomly included in the study. The police fulfilling the designed criteria from each station were included in the study. Data was collected from the available personnel (fulfilling inclusion criteria) as per the convenience of the participants. Each station was visited at least 4-6 times to cover all personnel from that particular station. Before the data collection, proper approval was taken and all the ethical considerations were taken care. Voluntary participation was encouraged. After data collection, the data were analyzed through SPSS Version-17 for their mean values, frequency and percentages. The analyzed data were plotted in tables for its presentation.

## RESULTS

The findings of the study showed that the mean age of the study population was  $40.45 \pm 6.30$  years (range: 25- 54 years). Almost half (49%) of the study population was having the group from 35 to 44 years of age. The mean number of years of service in the city among the study population was  $8.09 \pm 6.25$  years (Range: 1-30 years of work). Most of the respondents (90%; 271) were head constables and (10%; 31) of them were from the grade of Assistant Sub Inspectors (SI) and Sub Inspectors (SI). Among the study subjects (49.7%; 150) had educational qualifications till graduation and above while the remaining 50.3% (152) had their education till secondary level. Further analysis of the data revealed that 14% (43) of the respondents were active smokers while 50% (138)

of them were found to be passive smokers. The presence of a familial history of chronic respiratory disease was found among 23% (69) of the participants. More than half of the respondents (58%; 174) were from the traffic department whereas 42% (128) of them were from the law and order department. Most of the respondents (90%; 271) of them were working in the post of Police Officers (CPOs) and the rest (10%; 31) were Sub

Inspectors (SI) and Assistant Sub Inspectors (SI). A major proportion of the respondents (87%) reported that they never use a face mask while performing their duties either at the roadside or doing with the patrolling duty (*Table-1*). Further; analysis reflected that only 1 of the study participants reported the use of a respirator as a face mask during his duty. 38% of the respondents reported that it was uncomfortable for them to use the face mask. From the study findings, it was found that 21% of the participants reported having hypertension, 14% reported having diabetes and nearly 20% had the problem of varicose veins. The most prevalent musculoskeletal problem reported among study participants was low back pain which was about computed as 50%. Assessment of the respiratory morbidities was the main objective of the study and analysis reflected that 7% (20) of the respondents reported having frequent coughs and 6% (19) reported having chronic coughs. Nearly 15% (45) of them reported frequent phlegm and 13% (38) of them were having chronic phlegm. 10% (30) of the traffic police reported the problem of frequent wheezing and 4% (12) had chronic wheezing. The analysis further depicted that 18% (55) of the participants had Grade I dyspnea while 9% (27) of them had Grade 2 dyspnea. Similarly, 25% (76) of the respondents presented with peak flow restriction (*Table 2*) which meant that their peak flow readings were less than normal.

**Table 1: Characteristics of the Study Sample Based on Work-Related Factors**

Frequent Respiratory Morbidities	Frequency (%)
Frequent Cough	20 (07)
Frequent Phlegm	45 (15)
Frequent Wheeze	18 (6)
Any one of the Frequent Respiratory Morbidities	71 (24)
<b>Dyspnea</b>	
Grade 1 Dyspnea	55 (18)
Grade 2 Dyspnea	27 (09)
<b>Chronic Respiratory Diseases</b>	
Chronic Cough	19 (06)
Chronic Phlegm	37 (12)
Chronic Wheeze	12 (04)
Peak Flow Restriction	76 (25)
Any of the Chronic Respiratory Morbidity	55 (18)

**Table 2: Prevalence of Respiratory Morbidities**

Current Work Department	Frequency (%)
Law and Order	128 (42)
Traffic	174 (58)
<b>Nature of Shift</b>	
Day Shift	166(55)
24 Hours Duty	136 (45)
<b>Posting Location</b>	
Crowded Junctions	223 (74)
Highways and Crowded Junctions	56 (19)
Highways	23 (07)
<b>Type of Duty</b>	
Traffic Duty	147 (49)
Patrolling Duty	128 (42)
Other:(Combined Duties*)	27 (09)

## DISCUSSION

Occupational morbidity in relation to the respiratory disorders studies in Pakistan has mostly been conducted among industrial workers exposed to occupational hazards. Workers who are continuously exposed to high levels of ambient air pollution due to the nature of their job have attracted less attention to be explored in terms of looking into its magnitude. This study was carried out to study a specific population who is very evidently and constantly exposed to the respiratory problems that arise due to smoke and air pollution emitted from the vehicles. For this reason, around 302 traffic police working in Peshawar city were studied to assess the prevalence of respiratory morbidities and the factors associated with it them. The overall prevalence of chronic respiratory morbidity was found around 21% among the studied population. This overall prevalence of chronic respiratory morbidity among the study population was higher compared to prevalence figures reported by community-based studies in Pakistan, which range from 2% to 8.5%.<sup>17,18</sup> Data regarding chronic respiratory morbidity available from population-based studies from other developing countries include those from a study conducted in Bangkok with a prevalence of 7.1 per cent. Another study conducted in Iran has shown 4.65 per cent results for respiratory morbidity in adults.<sup>19</sup> A high prevalence of chronic respiratory morbidity exposure of about 17 per cent was reported in a study conducted among adults in Ghana.<sup>20</sup> The prevalence of chronic cough, chronic phlegm and chronic wheeze were separately analyzed in the present study and was found to be 6.3%, 12.3% and 4 % respectively. Prevalence figures of chronic cough have been reported from community-based studies from various parts of India. It ranges from 2.2 to 2.5% per cent in rural areas and 1.7% in urban areas across different study sites in India.<sup>21,24</sup> Operational definitions for

chronic cough and phlegm used by the different studies vary from "cough at night", "cough in the morning" and "phlegm in the morning", cough and phlegm "without a cold", "on most days" and "for at least 3 months" from the current study that used the definition as cough/ phlegm for three or more consecutive months. The prevalence of chronic phlegm in the present study was 12.3%. In comparison, the figures from other studies in India have reported a chronic phlegm prevalence of 1.9% to 4.4%.<sup>23,25</sup>

## CONCLUSION

Respiratory diseases are the fast growing and prevailing concerns around the world among the workers who are exposed to the occupational hazards in their environment. Traffic police is one such category of the population who has continuous exposure to the environmental and vehicle pollution. Findings of the study concluded that Police personnel working in traffic department have significantly higher prevalence of respiratory morbidity. Therefore; appropriate use of face mask and other personal protective equipments need to be used by the traffic police to overcome and reduce the prevalence of respiratory problems among them. Duty should be rotated to get less exposure to the pollutants. Further periodic monitoring of the health of the traffic police may help to detect them for their problems at early stages that in response may help to overcome their respiratory ailments timely and productively.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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### CONTRIBUTORS

1. **Shah Zareen Khan** - Concept Design; Data Acquisition; Data Analysis/Interpretation
2. **Ahsan Ullah** - Concept Design; Data Acquisition; Data Analysis/Interpretation
3. **Muhammad Sabir** - Data Acquisition; Critical Revision
4. **Abdur Rahim Khan** - Data Analysis / Interpretation; Supervision; Final Approval
5. **Abdur Rahim** - Critical Revision; Supervision; Final Approval
6. **Iftikhar Ali Khan** - Data Acquisition; Data Analysis/Interpretation
7. **Alhajuddin** - Data Acquisition; Data Analysis/Interpretation

## PAMPHLET AS A TEACHING TOOL FOR IMPROVING NURSE'S KNOWLEDGE REGARDING NASOGASTRIC TUBE FEEDING

Aurang Zeb<sup>1</sup>, Hassan Karim<sup>2</sup>, Muhammad Idrees<sup>3</sup>, Sabira Bibi<sup>4</sup>, Sunbal Rehman<sup>5</sup>, Shahid Ali<sup>6</sup>

### **ABSTRACT**

### **OBJECTIVES**

*This study aimed to access informative pamphlets to improve nurses' knowledge regarding nasogastric tube feeding.*

### **METHODOLOGY**

*A quasi-experimental study was carried out among nurses in private and government tertiary care hospitals in Peshawar, KPK. The critical care unit participants were selected for the study using a convenient sampling technique. The participants were divided into control and experimental group. The experiment group was taught by informative pamphlet while the control was not. The questionnaire was adopted from similar studies, which included 17 questions. Data were analyzed by using SPSS software version 25.*

### **RESULTS**

*The experimental group's score was higher than the control group. The mean knowledge score of the control group participants was 15.42%, whereas the mean score of the intervention group was 17.82%. It shows that the intervention group resulted better than the control group.*

### **CONCLUSION**

*Keeping in view the current study; it may be concluded that using informative pamphlets as a teaching tool significantly improves nurses' knowledge about nasogastric tube feeding.*

**KEYWORDS:** Pamphlet Teaching, Nasogastric Tube, Nurses, Knowledge, Feedings

#### **How to cite this article:**

Zeb A, Karim H, Idrees M, Bibi S, Rehman S, Ali S. Pamphlet as a Teaching Tool for Improving Nurses Knowledge Regarding Nasogastric Tube Feeding. J Farkhanda Inst Nur Pub Health. 2022;2(1): 21-25

#### **Correspondence**

<sup>1</sup>Aurang Zeb, Associate Professor, Rehman College of Nursing

 aurang.zeb@rmi.efiv.pk

 +92-346-3540735

<sup>2</sup>Final Year BSN Student, Rehman College of Nursing

<sup>3</sup>Final Year BSN Student, Rehman College of Nursing

<sup>4</sup>Final Year BSN Student, Rehman College of Nursing

<sup>5</sup>Final Year BSN Student, Rehman College of Nursing

<sup>6</sup>Final Year BSN Student, Rehman College of Nursing

### **INTRODUCTION**

Every human being needs a sufficient amount of food to stay alive. The person takes food by mouth

with proper nutrition to maintain health. Sometimes, patients cannot take their food orally due to medical conditions like difficulty swallowing, pharynges' inflammation, esophagitis, pancreatitis, stroke, etc. These patients are more prone to malnutrition, and it is vital to provide sufficient food to the patient to prevent malnutrition. Therefore, a nasogastric tube is mainly used to maintain adequate nutrition. Nasogastric (NG) tube feeding is a procedure performed by nurses for those patients who cannot take food orally.<sup>1</sup> The nasogastric tube is used for feeding, medication, and stomach lavage in certain conditions like an overdose of drugs, poisoning,

and diagnostic purposes.<sup>2</sup> NG feeding is routine care for patients who are critically ill. For nutritional management in a critically ill patient, NG feeding is challenging. A nurse plays an essential role in patient care. Patient health is affected by nurses' knowledge and practice. According to the literature review, patients who suffer from stress and anorexia cannot take food, and their body's nutritional demand is high. So for these patients, nasogastric feeding is helpful. However, nasogastric feeding is contraindicated in some conditions like a patient suffering from gastrointestinal tract infection, bowel obstruction, diarrhea, and vomiting.<sup>3</sup> A quasi-experimental study was carried out in Egypt for "Effect of an education program on nurse's knowledge and practice about nasogastric tube feeding". According to this study, nurses' knowledge is insufficient due to an understanding of proper guidelines and education programs regarding nasogastric tube feeding. The education program had a good effect on enhancing quality patient care.<sup>4</sup> Another experimental study conducted in Egypt indicates that the mean practice score of nurses regarding NG tube feeding before giving any education program was  $40.18 \pm 3.30$ , and it improved up to  $87.09 \pm 14.55$  after giving any educational program.<sup>5</sup> Another study results showed that 62% of nurses had insufficient knowledge regarding nasogastric tube feeding and more than 38% had good knowledge.<sup>6</sup> Furthermore, a quantitative descriptive study was conducted in Kolkata hospital to assess the knowledge and practice of nursing staff regarding NG feeding and found that 76% of nurses had sufficient knowledge about enteral feeding, and 24% had insufficient knowledge.<sup>7</sup> In another study from Cairo, most of the study participants were female, married, and diploma holder and their ages ranged from 26 to 45 years. They have more than ten years of experience in the critical care unit, the result of this study revealed that 63% of participants have poor knowledge, and they don't know the proper guidelines of medication administration via NG tube and 36% to 53% mistakes done because of tube blockage and aspiration, 63% of participants want the educational program to improve their knowledge and to overcome complication. conducted a quantitative cross-sectional study in India. The study resulted that 44% of the nursing staff had above-average knowledge, and 44% had below-average knowledge regarding NG feeding among critically ill patients. This study also revealed that 80% of nurses understand before

giving nasogastric, 74% during feeding, and 73% of practice skills after feeding. Similarly, another study reported a variation in knowledge among nursing staff. Among the study participant, 100% was able to initiate NG feeding. Half of the participant, 43%, had good knowledge about NG feeding, and 49% was competent to check the NG tube placement.<sup>8</sup> Providing an educational program about enteral nutrition highly improves caregiver knowledge and practice and reduces NG feeding complications. Before any implication, 62.5% of study participants had adequate knowledge, and 91% had sufficient knowledge after an educational program.<sup>9</sup> Another cross-sectional study in Lahore, Pakistan showed that 48.6% of nurses had poor knowledge levels, and only 10% had appropriate knowledge.<sup>10</sup> Being a health care provider, nurses should know about proper assessment of tube size, tube position in the stomach, method of tube feeding to prevent complications, and provide effective patient care. Nurses' lack of appropriate knowledge regarding nasogastric tube feeding may lead to complications such as pulmonary aspiration, vomiting, and regurgitation. Limited literature is available in the Pakistani context on this topic. So the research was conducted to know the exact status of nurses' knowledge concerning NG feeding. These findings will be shared with hospital management to develop and implement policies for proper care of patients with nasogastric tube feeding. On the other hand, during our clinical observation, it was observed that nurses have poor knowledge regarding nasogastric tube feeding. We will introduce a pamphlet as a teaching tool for improving nurses' knowledge about NG feeding. This study will be helpful for nurses to enhance their understanding of the proper administration of nasogastric tube feeding.

## METHODOLOGY

A quasi-experimental design was used as the study design. The participants were divided into control and experimental group. The experiment group was taught by an informative pamphlet the control group was used for comparison. The research was conducted at both public and private tertiary care hospitals in Peshawar. The study subjects were registered nurses with a minimum six-month clinical experience. Registered nurses were selected by using a convenient sampling technique. Convenient sampling is a non-probability sampling technique where subjects are selected because of their easy availability and proximity to the researcher. The sample size was calculated by

Raosoft software, with a margin of error of 5 %, a confidence interval of 95%, and a calculated sample size of 103. Registered nurses with a minimum of six months of experience in patient care were included in this study while nurses who have attended any specialized education workshop on Nasogastric tube feeding were excluded from this study. Data was collected through a well-organized questionnaire adopted from.<sup>11</sup> The questionnaire consists of seventeen questions about the knowledge of nurses regarding NG tube feeding. The participants were divided into experimental 52 and control 51 groups. The experimental groups were taught the appropriate procedure of NG tube insertion using an informative pamphlet in the local language, the control group was taught by a discussion on the topic. The mean scores of both groups were calculated and compared for significant differences. The data collection approval was taken from the Chief Nurse of Rehman Medical Institute, while Approval in Hayat Abad Medical Complex was taken from the nursing director. The informed consent was taken from each participant for their agreement as a participant, and respect for autonomy and confidentiality was assured. Data were analyzed by using SPSS version 25. In the descriptive statistics, Frequencies and percentages have been calculated for nominal and ordinal data; whereas, Means and standard deviation were calculated for continuous variables. In inferential statistics, an independent sample T-test was applied to compare the mean difference in nurses' knowledge regarding NG tube feeding.

## RESULTS

This study consisted of 103 participants, including 38 (36.9%) male, 60 (58.3%) female, and 5(4.9%) who didn't mention their gender specifications. The mean age of the participants was 26.25, with a standard deviation of 4.067. As far as staff qualification level is concerned, 41.7% of participants were diploma holders, 46.6% were BSN degree holders, and 11.7% of participants didn't mention their qualifications. The participants were divided into two groups, 50.5% of the participants were in the control group, and 49.5% were in the interventional. The mean score of the intervention group was 17.82 whereas it was 15.42 out of 24 for the control group. Independent sample T-tests were applied to the mean knowledge and grouping variable to find any significant association. It was signed with a p-value of 0.001. Furthermore, chi-square was

applied to the category of knowledge and grouping variables; it was also significant with a p-value of 0.012.

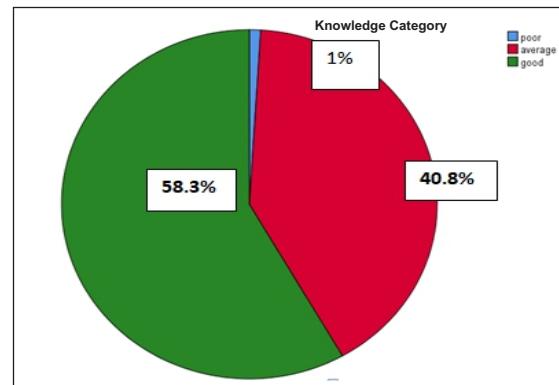


Figure 1: Pie Chart Showing the Knowledge Level of Participants

As shown in figure 1 the knowledge of participants was divided into three categories. The knowledge score from 1 to 8 out of 24 scores was considered poor knowledge, participants who score from 9 to 16 were considered with average knowledge, and those who scored from 17 to 24 were considered good knowledge. In this study, 1% of participants have poor knowledge, 40.8% have the average ability, and 58.3% have good knowledge.

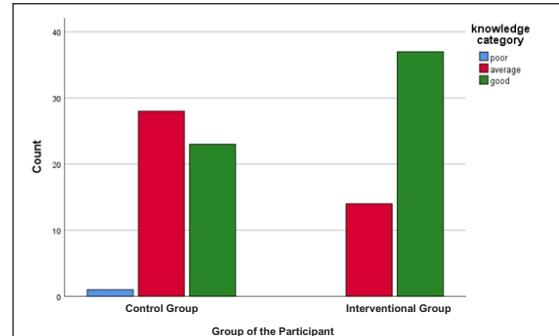


Figure 2: Comparison of Knowledge between Control and Interventional Group

## DISCUSSION

The research conducted in Egypt found that knowledge regarding NG feeding before the implementation of the education program was poor, and after the implementation of education, it improved. This study revealed that education programs improved nurses' knowledge regarding feeding administration. Similarly, the current study also shows that the teaching program had a good effect on nurses' knowledge.<sup>8</sup> Another study, "Impact of Implementing an Education Program Regarding Care of Nasogastric Tube Feeding on

Nurse's Knowledge," was conducted in Egypt and reported that 62% of nurse's poor knowledge and 38% have satisfactory knowledge.<sup>1</sup> In contrast, this current study shows good knowledge in nurses regarding NG Feeding. Qusai's Experimental study "The Effect of systematic education intervention about NG tube feeding on caregiver's knowledge" was done in China and showed no significant difference found in pretest knowledge between the control and experimental groups. In contrast to this, the current study reports a significant difference in control and experimental group scores.<sup>4</sup> The cross-sectional descriptive study "Critical care nurses' knowledge and skill regarding NG feeding. They found that 10% of nurses have poor knowledge, 30% average knowledge, and 60% have good knowledge.<sup>9</sup> A cross-sectional descriptive study about "Knowledge and Practice among Nurses Regarding NG Feeding "was conducted in Lahore and found that 48% of nurses had poor knowledge, 10% adequate knowledge, and 41.4% average knowledge. This study concludes that nurses' low level of knowledge, compared to this current study, shows good knowledge about NG Tube Feeding. Compared to this recent study, 1% of nurses had poor knowledge before the intervention of the education program. The present study emphasized that nurses had a good level of knowledge among nurses regarding NG feeding with the mean of and SD resulted in poor knowledge of the practice of the nurses.<sup>1</sup> Training sessions should be conducted in a healthcare organization to improve nurses' knowledge regarding NG tube feeding. Furthermore, this study also recommended providing written guidelines protocol to nurses about nasogastric tube feeding and encouraging nurses to attend national workshops about nasogastric tube feeding.

## LIMITATIONS

In this study, the casual association may not be determined because of non-probability sampling.

## CONCLUSION

The current study concluded that pamphlets provided to nurses working in I.C.U.at Rahman medical institute and Hayat Abad medical complex hospitals significantly improved their knowledge and practice related to patients undergoing nasogastric tube feeding.

## CONFLICT OF INTEREST: None

## FUNDING SOURCES: None

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### CONTRIBUTORS

1. **Aurang Zeb** - Drafting Manuscript; Critical Revision; Supervision; Final Approval
2. **Hassan Karim** - Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision
3. **Muhammad Idrees** - Concept Design; Data Acquisition; Data Analysis/Interpretation
4. **Sabira Bibi** - Data Acquisition; Data Analysis / Interpretation
5. **Sunbal Rehman** - Data Acquisition
6. **Iftikhar Ali Khan** - Data Acquisition

## PERCEPTION OF NURSING STUDENTS REGARDING LEARNING ENHANCING ATTITUDES AND BEHAVIOURS OF TEACHERS

Sajad Hussain<sup>1</sup>, Rahila<sup>2</sup>, Rahmat Ali Khan<sup>3</sup>

### **ABSTRACT**

### **OBJECTIVES**

*The purpose of this study was to identify the perceptions of nursing students regarding learning-enhancing factors of teachers' attitudes and behavior.*

### **METHODOLOGY**

*A descriptive cross-sectional study was conducted using a convenient sampling technique. Data were collected through a questionnaire from 125 nursing students at two public sector nursing colleges in Peshawar, Pakistan. Ethics approval was obtained from Institutional Review Board. Data were analyzed using SPSS version 20.*

### **RESULTS**

*Out of the total selected sample, 31 participants were males and 94 were females. The mean age of respondents was 30 years. All the participants agreed that the attitude and behavior of teachers affected students learning. The most enhancing factors for the learning of nursing students were "Giving value to teaching", "Motivation towards teaching", "Accept Responsibility for the lecture", "Having good knowledge of the subject matter", and "Confidence in delivering the lecture", "Interest in the lecture", "Regular and punctual for class", "Use Polite Language to students" etc.: While, "being suspicious about students success", "Extra Expectation from students", "Favoritism in students", "Late for class", "Punishing the students", etc.: were regarded as not enhancing factors.*

### **CONCLUSION**

*The nursing students were not fully satisfied with the nursing institutional environment. So, the teacher must adopt all those attitudinal and behavioral parameters which were perceived enhancing factors and avoid others.*

**KEYWORDS:** *Perceptions, Learning, Attitude, Behavior, Teachers, Nursing Students*

#### **How to cite this article:**

Hussain S, Rahila, Khan RA. Perception of Nursing Students Regarding Learning Enhancing Attitude and Behaviours of Teachers. J Farkhanda Inst Nur Pub Health. 2022;2(1): 26-29

#### **Correspondence**

<sup>1</sup>Sajad Hussain, Assistant Professor/Principal Fatima College of Nursing & Health Sciences Swat

✉: [sajad185@yahoo.com](mailto:sajad185@yahoo.com)

☎: +92-346-3284574

<sup>2</sup>Nursing Instructor, Govt: College of Nursing, Bannu  
<sup>3</sup>Head Nurse, SGTH Swat

### **INTRODUCTION**

Teachers play a pivotal role in the development of

an individual, group, community society and nation. Teachers have a basic role in students learning. Learning is affected by many factors in which the behavior and attitude of teachers are the two factors which affect nursing students learning. Behavior may be observed directly by others in their surroundings.<sup>1</sup> The role of the teacher has evolved beyond traditional lecture delivery to their role as facilitator, mentor and guide for students. The characteristics of good teachers are the ability to explain clearly, not to criticize students in front

of others, to be confident, to be supportive and encouraging students etc.<sup>2</sup> When teachers and students respect one another a trusting environment is formed, which is necessary for learning. Good communication of teacher shows respecting manner toward the students, and it increases student's learning. A good teacher behaves positively with students in a respectful manner.<sup>3,4</sup> Literature suggests that best teaching practices include good rapport with students, preparation for the course and its delivery, students' encouragement and fairness.<sup>5,6</sup> Negative behavior of teachers perceived by the students include; rude gestures, aggression and not giving enough time to students which may lead to a stressful relationship between students and teacher resulting in a disruptive teaching-learning environment.<sup>7,8</sup> Attitude is how one feels and thinks about his/her environment. Attitude is not directly observable and can be reflected in behavior.<sup>9</sup> Teachers' attitudes, practices, and beliefs have a significant impact on student achievement.<sup>10</sup> Nursing education is in the transformation stage from diploma in Nursing to Baccalaureate, master and doctorate programs in Pakistan. However, little is known regarding the behavior and attitude of nurse educators and their impact on students learning in Pakistan. The current study was therefore aimed to address this knowledge gap. The key objective of this study was to determine the perception of nursing students regarding educators' attitudes and behavior toward students learning.

## METHODOLOGY

The current study adopted a descriptive cross-sectional design using a self-administered questionnaire as a tool for collecting the data. Nursing students from two public sector nursing colleges in Peshawar were recruited for the study as per pre-defined eligibility criteria. Using a convenient sampling technique, a total of 125 participants were included in this study. Students who were enrolled in a degree or post-basic speciality program for at least six months were invited to participate in the study while all those who had spent less than six months of time in the institutes were excluded. Ethics approval was obtained from Institutional Review Board and permission was secured from the heads of the institutions prior to collecting the data. Written informed consent was obtained from the participants with full autonomy to voluntarily join and withdraw at any stage of the study. To ensure anonymity all personal record of the participants was kept secret. Data were analyzed through SPSS

software version 20.0. The frequencies and percentages of the respondents were calculated for the descriptive data analysis.

## RESULTS

The demographic data depicted that most of the participants 94 (75.2%) were females while only 31 (24.8%) were males. Most of the participants n=77 (62%) had a Diploma in General Nursing plus post-basic diplomas in different specializations. Participants in this study had a wide range of work experience, with the majority (n=38) having 6 to 10 years of experience followed by n=33 participants having 1 to 5 years of experience, while only 13 participants out of the total had the experience of 16 or above years.

**Table 1: Demographic Data**

Participants	Frequency	%Age
Total	125	125%
Male	31	24.8%
Female	94	75.2%
Institution	Frequency	%Age
Post Graduate College of Nursing	73	58.4%
Khyber Medical University	52	41.6%
Qualification	Frequency	%Age
Fsc	23	18.4%
Diploma in General Nursing	10	8%
BSc N generic or Post R. N	15	12%
Specialty Plus Diploma in General Nursing	77	61.6%
Experience	Frequency	%Age
No Experience	24	19.2%
1 to 5 years	33	26.4%
6 to 10 years	38	30.4%
11 to 15 years	17	13.6%
16 and above	13	10.4%
Total	125	100%
Program of Study	Frequency	%Age
Post RN BSc Nursing	74	59.2%
BSc Nursing Generic	23	18.4%
Specialty	15	12.0%
MSc N	13	10.4%
Semester	Frequency	%Age
Specialty(Senior)	15	12%
Third	65	52%
Fourth	45	36%

**Table 2: The Enhancing Attitudinal Parameters for Nursing Students' Learning.**

Attitudinal Parameter	Yes (%)	No (%)
Give value to teaching	100%	0%
Motivated towards teaching	100%	0%
Accept Responsibility for the lecture	98.4%	1.6%
Having good knowledge of the subject matter	98.4%	1.6%
Confidence in delivering the lecture	98.4%	1.6%
Interest in lecture	98.4%	1.6%
Optimists about student's success	94.4%	5.6%
Student's Acceptance	95.2%	4.8%
Commitment to course completion	92.8%	7.2%
Offering self for students help	92.0%	8.0%
Perceiving the students positively	92.0%	8.0%
Respecting the students	91.2%	8.8%

**Table 3: The Enhancing Behavioral Parameters for Nursing Students' Learning**

Behavioral Parameters	Yes (%)	No (%)
Regular and punctual for class	98.4%	1.6%
Good communication skills	98.4%	1.6%
Encouraging the students to participate in class	98.4%	1.6%
Rules and regulation follower	98.4%	1.6%
Caring the students	97.6%	2.4%
Preparation for (class) lecture	97.6%	2.4%
Allowing students to ask question	97.6%	2.4%
Helping the students	96.8%	3.2%
Lecture in time	96%	4%
Praising the students for well done work	96%	4%
Assertiveness towards students	94.4%	5.6%
Use Polite Language to students	94.4%	5.6%
Active Presentation Gesture (body movement)	94.4%	5.6%
Constructive Feedback to students	93.6%	6.4%
Good Personality (Attractive Physical look)	92.8%	7.2%
Proper teaching style or method	92.8%	7.2%
Welcoming the students	89.6%	10.4%

## DISCUSSION

The key aim of this study was to determine students' perceptions regarding learning enhancing attitudes and behaviors of their teachers. All the participants agreed that the attitude and behavior of the teacher can affect students learning. These findings are consistent with previous studies which reported that the attitude and behavior of the teachers affect the students' performance in the class.<sup>11,12</sup> Attitude of teachers has a significant role in the learning of nursing students as 100% of participants of the current study agreed that the attitude of nursing teachers can affect students' learning. Literature also supports these findings; A good teacher has a positive effect on students' learning and development through the knowledge of all the contents, the expertise of different teaching methods, and communication skill.<sup>13</sup>

Teacher's encouragement inculcate the feeling of happiness, satisfaction, dedication, and commitment among students.<sup>14</sup> Similarly, findings of another study showed that "exhibiting responsibility" was an important behavior of the nursing teacher. The findings of the current study showed that "helping the student" by the teachers was the most important behavior of the nursing teacher. The most enhancing factors for the learning of nursing students are "Regular and punctual for class, Good communication skills, encouraging the students to participate in class, etc. Similarly, the literature showed, that dealing with own time well, giving confidence to participation and backing students are the most important behaviors. Likewise, "respecting the student as individuals" by the teacher is also the most important behavior of the nursing teachers.<sup>15</sup> Our study notes that punishing students, assigning them extra work, pressurizing students, being aggressive and hostile and threatening students are the negative behaviors that demotivate students. These findings are supported by a study conducted in a nursing school in Peshawar, which showed that 79.3% of the total replied, feel worried that their performance did not meet the expectation of the teacher.<sup>16</sup> These findings are also consistent with another study from Japan which reported that negative comments by teachers, discouraging students, not giving them time etc. are the demotivating factors for students.<sup>17</sup> Behavior of teachers has an eminent source that affects nursing students learning.<sup>18</sup> The most enhancing factors for the learning of nursing students are "Regular and punctual for class, good communication skills, encouraging the students to participate in class, while punishing students, threatening them and discouraging negatively impacts students learning. The findings of the current study suggest that the attitude and behavior of nursing teachers affect students' learning to a great extent. Students' learning is positively influenced by those behaviors and attitudes which are usually considered ethical and professional. However, students learning is negatively impacted by those parameters which are considered unprofessional. Nurse educators shall be mindful of their attitude and behavior while dealing with students. All nurse educators shall follow the principles of adult learning for optimum student facilitation.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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## CONTRIBUTORS

1. **Sajad Hussain** - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval
2. **Rahila** - Concept & Design; Data Acquisition; Drafting Manuscript; Final Approval
3. **Rahmat Ali Khan** - Concept & Design; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval

## KNOWLEDGE REGARDING POST-OPERATIVE CARE OF PATIENTS WITH KIDNEY TRANSPLANTATION AMONG NURSES IN PESHAWAR, PAKISTAN

Faiz Muhammad<sup>1</sup>, Asghar Khan<sup>2</sup>, Dost Muhammad<sup>3</sup>, Ijaz Arif<sup>4</sup>, Muhammad Saleem<sup>5</sup>, Muhammad Ali<sup>6</sup>, Tahira Sadiq<sup>7</sup>

### **ABSTRACT**

### **OBJECTIVES**

*Kidney transplantation is a surgical procedure and the best treatment choice for end-stage renal disease. This study aims to assess nurses' level of knowledge regarding post-operative care of patients with kidney transplantation.*

### **METHODOLOGY**

*This descriptive cross-sectional was carried out in Hayatabad Medical Complex (HMC) and Rehman Medical Institute (RMI) Peshawar from February 2019 to May 2019. These are tertiary care hospitals; the former is a public sector hospital while the latter is a private sector hospital. A convenient sampling technique was followed and included 109 participants. Data were collected using a structured questionnaire of 25 items related to the care of post-renal transplantation on a Likert Scale. Frequencies and percentages were calculated for demographic variables. The Mean and standard deviation were calculated for knowledge among nurses. A Chi square test was applied to find an association between demographic variables and level of knowledge. Data were analyzed with SPSS 20.*

### **RESULTS**

*Of the total number of participants 109, 23 (26.6%) were females, and 77 (73.3%) were male. The mean score of knowledge was  $11.59 \pm 3.391$  out of 25. Of the participants, 62(56.9%) fell into the poor score, and the average score was awarded by 44 (40.4%), while 3 participants (2.8%) scored good knowledge.*

### **CONCLUSION**

*The nurses demonstrate poor knowledge regarding post-operative care of patients with kidney transplantation. Education and experience play an essential role in enhancing the education of nursing staff working in kidney transplantation units. Formal training needs to be imparted to provide quality care to renal transplantation patients.*

**KEYWORDS:** Knowledge, Nurses, Post-transplant Care, Education

#### **How to cite this article:**

Muhammad F, Khan A, Muhammad D, Arif I, Saleem M, Ali M, Sadiq T. Knowledge Regarding Post-Operative Care of Patients with Kidney Transplantation among Nurses in Peshawar, Pakistan. J Farkhanda Inst Nur Pub Health. 2022;2(1): 30-34

**Correspondence**

<sup>1</sup>Faiz Muhammad, Principal, Islamia College of Nursing & Allied Health Sciences , Peshawar  
 ☎: faizbangash@gmail.com  
 ☎: +92-336-2244088  
<sup>2</sup>Principal, Battkhela College of Nursing & Allied Health Sciences District Malakand  
<sup>3</sup>DMU Officer EDO Health Office, Hangu  
<sup>4</sup>Principal Swat College of Nursing, Swat  
<sup>5</sup>Principal, Abbottabad College of Nursing & Allied Health Sciences, Abbottabad  
<sup>6</sup>RNO, DHQ(KDA) Hospital Kohat, Pakistan  
<sup>7</sup>Deputy Nursing Superintendent State College of Nursing Mirpur Azad Jammun and Kashmir

**INTRODUCTION**

The World Health Organization (WHO) reported in 2017 that there was 90306 kidney transplant, of which 32990 (36.5%) were living donor and 57316 (63.5%) were cadaveric kidney transplant.<sup>1</sup> The previous research has shown that chronic kidney disease (CKD) is one of the major health concerns globally with the rise in the prevalence of diabetes mellitus and blood pressure, and it has been estimated that nearly 434.3 million people have it in the East, with most of the burden observed in China and India.<sup>2</sup> Furthermore, literature argue that one out of 10 individual is suffering from CKD. The highest and lowest were documented in Pakistan (21.1%) and India (10.2%).<sup>3</sup> It has been estimated that there is an incidence of more than 100 new cases in Pakistan.<sup>4</sup> In order to provide treatment to these patients, 180 dialysis facilities and 30 renal transplant units are operating across the country.<sup>5</sup> Renal Transplantation was started in 1979 at the Armed Forces Institute of Urology (AFIU), and they have performed 100 renal transplants at the end of 1985.<sup>6</sup> The researchers have widely acknowledged that transplantation is a time of profound uncertainty for the patient when undergoing renal transplantation involves much health proportion. Still, the nurses are at the center of care delivery.<sup>7</sup> The researchers have proven that it is not only the organ supply that causes the underutilization of transplants but the poor attitude, lack of knowledge, and various other sociodemographic factors are also involved.<sup>8</sup> Keeping in view the crucial of nurses in post-transplant care, their knowledge at an adequate level is essential. This requirement is even more critical in the developing world, where the health care system is already weak. In light of the significance of knowledge among nurses, the objective of this study is to assess the level of knowledge among nurses regarding post-transplant care.

**METHODOLOGY**

This descriptive cross-sectional study was carried out at the Institute of Kidney Diseases of Hayatabad Medical Complex and Rahman Medical Institution Peshawar, Pakistan, for 04 months, from February 2019 to May 2019. The ethical approval was granted by the Institute of Nursing Sciences at Khyber Medical University Peshawar. The sample size of the study was 109 Nurses, an online Raosoft Sample Size Calculator. For sample size calculation, the margin of error was considered, the confidence interval was 95% calculated, and the population was 151 nurses. A convenient sampling technique was utilized for the selection of participants. Informed consent was obtained from the study participants after completely explaining the purpose of data collection. A self-administered questionnaire was used for data collection pilot study was conducted on the 10% of the sample size. The Cronbach's alpha of 0.77 was obtained to check the reliability of the questionnaire. The questionnaire consisted of 25-items and two sections. The first section represented the demographic data, while the second section consisted of the questions regarding renal transplantation. Every question option contained four options, one correct and 03 incorrect options. The answers to the questions were considered correct and incorrect. Frequencies and percentages were calculated for demographic variables. The level of knowledge was assessed by obtaining a score on the scale of "Good knowledge," representing a score of  $\geq 70$ , "Average Knowledge" representing 50-70%, while  $< 50$  was considered "Poor knowledge." Chi-Squared was calculated for comparison among the demographic variables. SPSS 26 was utilized for data analysis.

**RESULTS**

A total sample consisted of 109 staff nurses, females were 80 (73%), and males were 29 (26%). The age of 62 % of the participants was between 61% were 23-30 years and 8% of the participants were  $> 37$  years old. Majority of the participants (54.1%, n = 59) had 3 years diploma, 42% (n=46) had BSN while 3.7% (n=4) had MSN. Most than half of the participants (50.5%, n = 55) had a clinical experience from 4 to 6years, 13% (n=15) had experience from 1to 3 years, 15% (n = 17) had 7-10 years, and 20% (n = 22) had more than ten years of clinical nursing experience. The possible level of knowledge of participants scored from 0 to 25. The mean score for all participants was

11.59±3.391 (Max=21, Min= 3). Of the sample, 62 (56.9%) of the participants obtained poor scores: 44 (40.4%) participants showed an average result, and 3(2.8%) revealed good knowledge. The chi-square test of a demographic variable with a level of knowledge showed significance with qualification (0.05) and training status (0.045).

Table 1: Demographic Data

Gender	Frequency	%Age
M	23	26.6%
F	77	73.3%
<b>Marital Status</b>		
Unmarried	56	61.5%
Married	53	31.2%
<b>Previous Training of Transplant</b>		
Yes	17	15.6%
No	92	84.4%
<b>Age</b>		
23-30	67	61.5%
30-37	34	31.2%
>37	8	7.3%
<b>Education Status</b>		
3 years diploma	59	54.1%
BSN	46	44.2%
MSN	4	3.7%
<b>Designation</b>		
Staff Nurse	76	76%
Head Nurse	21	21%
Supervisor	2	2%
Manager	1	1%
<b>Experience</b>		
1-3	15	15%
4-6	46	46%
7-10	17	17%
>10	22	22%

Table No 2: Knowledge about Post-Operative Care of the Patients with Kidney Transplantation

Responses of Participants	F(%)
Indications of renal transplant	82 (18)
Contraindications of renal transplant	16 (84)
Knowledge to change the post-operative dressing.	69 (31)
CKD Patient for kidney transplant.	25 (75)
Sign of rejection among renal transplant patients.	34 (66)
Important preparation for a renal transplant patient.	69 (31)
Knowledge about the more successful donation	36 (64)
Immediate post-operative assessment for the recipient	56 (44)
Normal range of CVP after renal transplant	28 (72)
The target of BP in the early postoperative period	61 (39)
Warning sign regarding urine output	54 (46)
Indications of hemodialysis	62 (38)
Knowledge about fluid replacement	16 (84)
Most essential medicine after transplantation	44 (56)
Precautions for post-operatively infection	69 (31)
Signs and symptoms of acute rejection	52 (58)
Immediate complication of post kidney transplantation	31 (69)
Lack of knowledge about contraindicated factors	43 (59)
Vital signs monitoring after transplant	43 (59)
Urine output monitoring after transplant	54 (46)
Electrolyte monitoring on the first day	30 (70)
Sedation of patient after transplant	22 (78)
Action after severe fluid overload	68 (32)
Techniques required for the patient to prevent infection	30 (70)
Knowledge to educate the family members	53 (47)

Table 3: Level of Knowledge among Nurses

Key	F	%Age	Mean Score
≥70%	Good knowledge	3	2.8%
50-69%	Average Knowledge	44	40.4%
<50&	Poor Knowledge	62	56.9%

Table 4: Association of Demographic Variables with a Level of Knowledge

		Good	Aver age	P-Value
<b>Gender</b>	Male	1	15	0.148
	Female	2	29	
<b>Age</b>	23-30	2	23	0.263
	30-37	1	17	
<b>Marital Status</b>	> 37	0	4	0.650
	Unmarried	2	23	
<b>Qualification</b>	Married	1	21	0.05
	Diploma	2	18	
<b>Designation</b>	BSN	1	23	0.093
	MSN	0	3	
<b>Experience</b>	Staff Nurse	2	31	0.482
	Head Nurse	1	10	
<b>Training Status</b>	Supervisor	0	2	0.045
	Manager	0	1	
<b>Experience</b>	1-3 years	1	4	0.482
	4-6 Years	2	20	
<b>Training Status</b>	7-10 Years	0	9	0.045
	>10 years	0	11	
<b>Training Status</b>	Yes	0	12	0.045
	No	3	32	

## DISCUSSION

This study was conducted to assess the knowledge of nurses regarding post-operative renal care. The mean score of knowledge among nurses revealed 11.59 out of 25. The previous finding of research supported the current findings where only 1 (6.7%) participant showed an adequate knowledge regarding post-operative care of patients with kidney transplantation among staff nurses. The previous study was conducted in India with the somewhat same health care facilities as our country. So it is concluded that our health care systems require the appropriate interventions to enhance the patients of renal transplant care.<sup>9</sup> In contradiction, a study conducted in Nigeria reported majority (62.8%) of the nursing staff had fair, while 29.5% of participants had poor knowledge regarding post-operative nursing care of kidney transplantation<sup>10,11,12</sup>. The differences in findings with the current results may reflect the

disparity in the level of education internationally. It might be possible that there is a practice of continuing nursing knowledge in the context of Nigeria. In Pakistan, training programs for nurses are not traditionally imparted, which results in poor knowledge, while in many countries, specialized training programs are conducted in the nursing discipline. In addition, in the current study, 69% of participants marked correct answers regarding the isolation and aseptic techniques that the nurses should follow during post-operative renal patients. Similarly, the previous literature also reported the same results that 69% of nursing staff answered the correct answer regarding the isolation and the need for aseptic techniques for post-operative patients of kidney transplantation.<sup>13,14,15</sup> So, it is a positive point that nurses have knowledge regarding isolation which is very important in the care of renal transplantation. Moreover, the results of the current study showed a significant positive association between the level of education and nurses' knowledge regarding post-operative care of kidney transplant patients. A previous study has found this result has established that with a higher proportion of baccalaureate nurses, the patient mortality decreases.<sup>16</sup> In contradiction, the previous literature proved insignificant findings and established that the level of education does not affect the nurses and the safety of patients.<sup>17</sup> Likewise, the previous study also reported a strong positive association between nurses' knowledge regarding transplantation and nurses' education. Similarly, there is a significant association between a training session and knowledge. The previous literature has established that exposure to the specific program resulted in a greater level of knowledge. Individuals with no college education were found to have a more negative attitude towards post-transplant care. The literature showed that training programs could increase self confidence, knowledge, critical thinking, and communication skills.<sup>18</sup> In the light of the literature, it can be concluded that specific previous training regarding the transplant will provide a positive platform for the nurse to care for patients in an efficient way.

## CONCLUSION

Overall, the nurses had very poor knowledge regarding post-operative care of patients with kidney transplantation in aspects of infection, kidney transplantation indication, blood pressure monitoring, fluids intake, isolation, and diet. Education and training play an important role in enhancing the education of nursing staff working in

kidney transplantation units. All health institutions need to arrange training sessions for the nurses to enhance their performance at work.

## ACKNOWLEDGEMENTS

All the participants and hospital directors/administrators are equally acknowledged for their help and cooperation in completing this study.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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## CONTRIBUTORS

- Faiz Muhammad** - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Supervision; Final Approval
- Asghar Khan** - Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Supervision; Final Approval
- Dost Muhammad** - Data Acquisition; Critical Revision; Supervision
- Ijaz Arif** - Data Analysis / Interpretation; Critical Revision; Supervision
- Muhammad Saleem** - Data Acquisition; Supervision
- Muhammad Ali** - Concept & Design; Data Acquisition; Data Analysis / Interpretation; Critical Revision
- Tahira Sadiq** - Critical Revision; Supervision

## ENHANCEMENT OF KNOWLEDGE AMONG CRITICAL CARE NURSES REGARDING THE IDENTIFICATION OF SHOCKABLE RHYTHMS AND DEFIBRILLATION AT A PRIVATE TERTIARY CARE HOSPITAL IN ISLAMABAD PAKISTAN

Abdul Rahim Khan<sup>1</sup>, Sajjad Ahmad<sup>2</sup>, Nuzhat Sultana<sup>3</sup>, Shams-Ul-Huda<sup>4</sup>, Asghar Khan<sup>5</sup>, Muhammad Ali<sup>6</sup>, Khalida Parveen<sup>7</sup>

### **ABSTRACT**

### **OBJECTIVES**

*To determine the effectiveness of teaching sessions on knowledge, regarding the identification of shockable rhythms and defibrillation among critical care nurses at a private tertiary care hospital, in Islamabad Pakistan.*

### **METHODOLOGY**

*A quasi-experimental design was used for this study. Fifty-eight nurses working in critical care units were selected through consecutive sampling. A multiple-choice questions tool with a 0.82 Content Validity Index was used for pre posttest with an educational session on electrocardiogram arrhythmias and defibrillation. The differences were measured using the repeated measures ANOVA test.*

### **RESULTS**

*Only 52 participants appeared in the second post-test of the study. Findings of  $12.75 \pm 4.42$ ,  $16.90 \pm 3.48$  and  $15.94 \pm 3.82$  in pretest, immediate posttest and follow-up test for shockable arrhythmias; and  $4.90 \pm 1.56$ ,  $6.78 \pm 1.41$  and  $6.00 \pm 1.40$  in pretest, immediate posttest and follow-up test for defibrillation knowledge were obtained. Pairwise comparisons for knowledge of shockable arrhythmias and pairwise comparisons for knowledge of defibrillation were found statistically significant with a significance value of  $p < .01$ .*

### **CONCLUSION**

*Based on a study finding it may be concluded that teaching sessions had a significant impact on the enhancement of knowledge.*

**KEYWORDS:** Knowledge, Shockable Rhythms, Defibrillation; Critical Care Nurse

#### **How to cite this article:**

Ahmad S, Sultana N, Huda SU, Khan AR, Khan A, Ali M, Parveen K. Enhancement of Knowledge among Critical Care Nurses Regarding the Identification of Shockable Rhythms and Defibrillation at a Private Tertiary Care Hospital in Islamabad, Pakistan. J Farkhanda Inst Nur Pub Health. 2022;2(1): 35-40

#### **Correspondence**

<sup>2</sup>Sajjad Ahmad, Assistant Professor Nursing, Principal Institute of Health Science School of Nursing, Mardan  
 ☎: sajjad2010.024@gmail.com  
 ☎: +92-333-56324554  
<sup>1</sup>Director Academics, The Quaid-E-Azam Institute of Nursing & Health Sciences Swabi  
<sup>3</sup>Director of Education Division, Shifa International Hospital Islamabad  
<sup>4</sup>Director Nursing, Ayub Teaching Hospital (MTI)  
<sup>5</sup>Principal, Bakhela College of Nursing & Health Sciences  
<sup>6</sup>Principal, Al-Rehman College of Nursing & Health Sciences, Vehari  
<sup>7</sup>Critical Care Nurse(NICU), Children Hospital PIMS Hosprital, Islamabad

### **INTRODUCTION**

A cardiac monitor is known to be the best medical device in critical care areas to diagnose and monitor ECG waveforms, arrhythmias and cardiac arrest at its earliest.<sup>1</sup> Literature suggests the level of skills of nurses is poor regarding life-threatening arrhythmias and their management.<sup>2,3</sup> On the other hand it is estimated that one-third of admitted patients are not appropriately defibrillated within the recommended time.<sup>4</sup> Studies conducted on critical care nurses showed that only (4.7%) of

nurses have a high level of knowledge about specific arrhythmias<sup>5</sup> which clearly shows the need to enhance the knowledge of critical care nurses to identify and manage arrhythmias accordingly. Furthermore, the literature supports that little information is available about the competency of nurses in the identification of shockable rhythms<sup>6</sup>, so, it becomes important to assess the ability of critical care nurses to the identification of shockable rhythm and defibrillation because knowledge is the key to identifying shockable rhythm that leads to early defibrillation.<sup>7,8</sup> Numerous studies suggested that nurses must have to improve their knowledge regarding the identification of arrhythmias.<sup>9</sup> Literature has also demonstrated that nurses have poor knowledge regarding cardiopulmonary resuscitation and its management techniques.<sup>10</sup> One way to overcome this shortcoming is through the use of lecture-based teaching sessions to enhance nurses' knowledge of the identification of arrhythmias.<sup>11,12</sup> To the best of the researcher's knowledge, limited research has been conducted to find the effectiveness of teaching sessions for the identification of shockable arrhythmias and the need for defibrillation among critical care nurses. The purpose of the study was to determine the effectiveness of teaching sessions on knowledge, regarding correctly identification of shockable rhythm and administering of defibrillation, among critical care nurses at Shifa International Hospital (SIH) Islamabad Pakistan.

## METHODOLOGY

Quasi-experimental, time series with a single group pre and post-test design was used for this study. The time was from September 2016 to September 2017. Non-probability convenience sampling method was used to select the participants from critical care areas of the hospital. Participants were bedside critical care nurses and worked in eight hours shift duties. Ethical approval was obtained from ISRB of Shifa International Hospital Islamabad. Written informed consent was also taken from all the participants. All critical care nurses working in the emergency room, coronary care unit (CCU), and medical and surgical Intensive care unit of Shifa International Hospital Islamabad Pakistan were included in the study. Those who did not complete three months' duration in the critical area were excluded from the study. The sample size was calculated by using the epi tool with SD of 14.6, Alpha of .05, Beta 0.2 and effect size of 5.6. The resultant sample size was 53, in each pre & post group. Self-

administered data collection questionnaire was developed regarding the identification of normal sinus rhythm, atrial arrhythmias, ventricular arrhythmias and defibrillation. The tool was presented to five experts for validity and clarity and obtained a Content Validity Index (CVI) of 82.3%. Each Multiple-choice question carried one mark and the wrong answer was marked as 0. After completion of the pretest of the participants teaching session was conducted by the primary researcher to review the normal conduction system of the heart, cardiac cycle and normal sinus rhythm. After the completion of the teaching session, a questionnaire was given to participants for post-test with the same content as was in the pretest. After the two weeks interval, participants were contacted to check retention of knowledge through the second post-test. Data were analyzed by using SPSS version 21. Descriptive statistics of frequencies and percentages were utilized for gender, experience, education level and working areas. Mean and standard deviation was calculated to assess the level of knowledge. Repeated measures ANOVA test was used to compare the mean results of the pretest, first and second posttest.

## RESULTS

The sample consisted of 58 participants as shown in table 1 majority were male. Of the participants 22 (37.9%) participants were from CCU, 14 (24.1%) from ER, 16 (27.6%) from MICU, 5 (8.6%) were from SICU and 1 (1.7%) from Neuro-surgical step-down unit. The majority of participants with nursing experience have less than two years' experience, 10 (17.2%) participants had two to four years of experience and 10 (17.2%) participants had more than four years of experience in critical care areas.

Table 1: Demographics of the Participants (N=58)

Variables		N	%Age
Gender	Male	33	56.9%
	Female	25	43.1%
Area of Placement	Emergency rooms	14	24.1%
	Coronary care unit	22	37.9%
	Medical ICU	16	27.6%
	Surgical ICU	5	8.7%
	Neuro step -down	1	1.7%
Experience	Less than two years	38	65.5%
	Two to four years	10	17.2%
	>Four years	10	17.2%
Education	General Nursing	41	70.7%
	Post RN BScN	07	12.1%
	Generic BScN	10	17.2%
Certification Course	Basic Life Saving (BLS)	58	100%
	Advance Cardiac Life Saving (ACLS)	12	20.7%
	Basic Trauma Life Saving	1	1.7%

As shown in table 2 the mean scores of the knowledge regarding shockable arrhythmias and

defibrillation were found to be higher in the immediate post-test and follow-up post-test.

Table 2: Descriptive Statistics of Participant's Knowledge

	Knowledge	Mean	SD
Shockable Arrhythmias	Knowledge of shockable rhythm (Pretest)	12.750	4.427
	Knowledge of shockable rhythm (1 <sup>st</sup> posttest)	16.903	3.488
	Knowledge of shockable rhythm (2 <sup>nd</sup> posttest)	15.346	3.823
Defibrillation	Knowledge of defibrillation (Pretest)	4.9038	1.562
	Knowledge of defibrillation (1 <sup>st</sup> posttest)	6.7885	1.418
	Knowledge of defibrillation (2 <sup>nd</sup> posttest)	6.0000	1.400

Estimated sphericity values (Epsilon) are  $>0.75$  that's why the Huynh-Feldt correction test was used to rectify the degree of freedom. Mauchly's test indicated that the assumption of sphericity had been violated because  $p = .000$  therefore the degree of freedom was corrected by using Huynh - Feldt

estimates of sphericity ( $\epsilon=.77$ ). The results are significant as  $F (1.54, 78.74) = 56.22, p = .000$ . This means that there are significant differences in knowledge among three different points of observation.

Table 3: Effect of a Teaching Session on Participants' Knowledge within Three Groups

Knowledge		Sum of Square	Df	Mean Square	F	Sig
Shakable rhythm	Greenhouse Geisser	457.96	1.50	303.67	56.22	.000
	Huynh -Feldt	457.96	1.54	296.59	56.22	.000
	Lower -bound	457.96	1.00	457.96	56.22	.000
Defibrillation	Greenhouse Geisser	93.16	1.74	53.37	48.40	.000
	Huynh -Feldt	93.16	1.80	51.70	48.40	.000
	Lower -bound	93.16	1.00	93.16	48.40	.000
Repeated Measures of ANOVA Test Applied. P-value < 0.05 taken as significant						

Table 4: Pairwise Comparisons for Knowledge

Shockable Arrhythmias		95% Confidence Interval			
Knowledge	Knowledge	Mean Difference	Sig.	Lower bound	Upper Bound
Pretest	Posttest	-4.153	.000	-5.316	-2.991
	Follow-up	-2.598	.000	-3.643	-1.549
Posttest	Pretest	4.153	.000	2.991	5.316
	Follow-up	1.557	.000	0.900	2.214
Follow-up	Pretest	2.596	.000	1.549	3.643
	Posttest	-1.557	.000	-2.214	-0.900
Defibrillation					
Pretest	Posttest	-1.885	.000	-2.405	-1.364
	Follow-up	-1.096	.000	-1.615	-.577
Posttest	Pretest	1.885	.000	1.364	2.405
	Follow-up	0.788	.000	.414	1.163
Follow-up	Pretest	1.096	.000	.577	1.615
	Posttest	-.788	.000	-1.163	-.414
Repeated Measures of ANOVA Test Applied. P-value < 0.05 taken as significant					

The findings show that there was a significant difference between the knowledge of participants in pre-intervention and immediate post-intervention tests ( $p < 0.01$ ). Results also indicate that there was a significant difference between the post-intervention and follow-up tests ( $p < 0.01$ ). A significant difference was also observed in the pre-intervention and follow-up test ( $p < 0.01$ ).

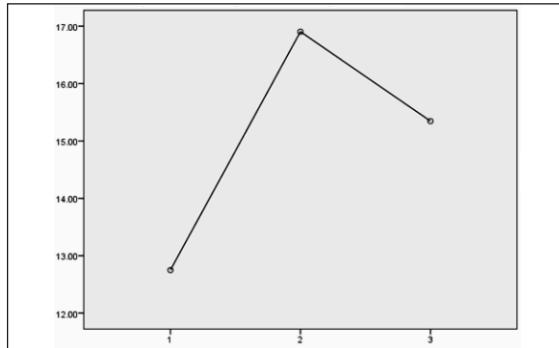


Figure 1: Estimated Margin Means for Knowledge of Shockable Arrhythmias (N=52)

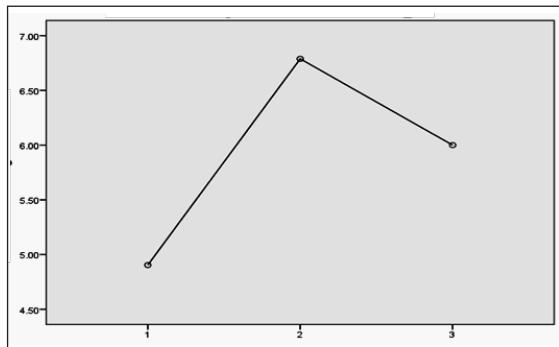


Figure 2: Estimated Margin Means for Knowledge of Defibrillation (N=52)

## DISCUSSION

The current findings are affirming the results of many other studies in which teaching sessions as a whole or as a part of the study intervention expands effectiveness in knowledge. Knowledge of shockable rhythms in the current study during pretest (Mean 12.750, SD 4.4275), first post-test (Mean 16.903, SD 3.4881) and second post-test (Mean 15.346, SD 3.8239) vary and are congruent with the results of a study conducted by Tubaishat (2015) in which pretest (Mean 5.7, SD 2.43), first post-test (Mean 7.6, SD 2.36) and second posttest (Mean 7.2, SD 2.79) at  $P < 0.01$  demonstrated that mean scores at posttest were significantly higher than those of the pretest.<sup>13</sup> This is indicative of the fact that teaching is an effective way to enhance the participants' knowledge regarding arrhythmia identification. The findings also supported the

results of the previous studies which demonstrated that descriptive teaching or structured teaching method was equally effective for enhancing the knowledge regarding cardiac rhythm.<sup>11,14</sup> Similar findings were also shown by Laura (2012) which indicated an overall improvement in post-test scores. The previous findings showed knowledge retention and clinical application in rhythm identification between post-test score and clinical application in simulation testing at a follow-up test by 3 months.<sup>15</sup> A quasi-experimental study conducted in 2013 showed that there were significantly high differences between the study and control group at posttest in all items. There was also a significant difference in nursing practices after identification of any change in ECG rhythms with a significance of  $p < .01$  in the post-test of the study group including all other domains of improvement.<sup>16</sup> The current findings vary with the previous literature<sup>9</sup> which demonstrated pretest = Mean of  $8.67 \pm SD 1.267$  and posttest Mean  $8.88 \pm SD 0.823$  indicating that teaching sessions had no statistically significant impact on gaining ECG knowledge. The current findings also vary from the previous study conducted by Laila, (2013) in which neither knowledge acquisition nor knowledge retention showed any significant differences between traditional teaching and high fidelity simulation.<sup>17</sup> The explicit reason is the participants in the current study were registered nurses while in the previous study participants were student nurses. The results of the current study showed that participant's knowledge regarding defibrillation in the pretest (Mean 4.9038, SD 1.56255) and the first post-test (Mean 6.7885, SD 1.41887) are highly significant in contrast to the study conducted in Hong Kong among emergency department nurses, in which only improvement was noted in defibrillation decision.<sup>9</sup> This shows that teaching session in the current study has a statistically significant impact on gaining knowledge about defibrillation. In the current study, 45 participants (77.6%) stated that they were confident to defibrillate the patient during shockable rhythms which is similar to the findings of the previous study in which 60% of nurses stated they had adequate knowledge and could apply theoretical knowledge into clinical practice, while 84% nurses were in view that they could manage cardiovascular cases in emergency rooms effectively.<sup>18</sup> The findings of the participant's knowledge regarding defibrillation in the pretest and first post-test were similar to the previous literature showing that pretest (Mean 14.88, SD 1.57) and post-test (Mean 45.7, SD 14.6)

scores, which showed that teaching session had a statistically significant impact on gaining of defibrillation knowledge.<sup>19</sup>

## LIMITATIONS

Some limitations of the study need to be considered for the applicability of the findings. The study was carried out by utilizing the convivence sampling technique. The population of the study consisted of participants from the private sector therefore it may not apply to the nurses working in public sectors hospital.

## CONCLUSION

In this study, significant improvement in the means and SD in the pretest, immediate post teaching test and the second posttest was noted. Based on these results, it is concluded that teaching sessions had a statistically significant impact on gaining knowledge regarding the identification of shockable arrhythmias and defibrillation over some time.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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### CONTRIBUTORS

- Abdul Rahim Khan** - Data Acquisition; Drafting Manuscript; Final Approval
- Sajjad Ahmad** - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval
- Nuzhat Sultana** - Concept & Design; Supervision
- Shams-Ul-Huda** - Concept & Design; Data Analysis/Interpretation; Critical Revision; Supervision
- Asghar Khan** - Drafting Manuscript; Critical Revision; Final Approval
- Muhammad Ali** - Data Acquisition; Critical Revision; Final Approval
- Khalida Parveen** -Data Acquisition; Final Approval

## ASSESSMENT OF THALASSEMIC CHILDREN'S PARENT'S KNOWLEDGE REGARDING THALASSEMIA

Sehrish Naz<sup>1</sup>, Anayat Jan<sup>2</sup>, Dildar Muhammad<sup>3</sup>, Shabnam<sup>4</sup>

### **ABSTRACT**

### **OBJECTIVES**

*To assess the thalassemic children's parents' knowledge level regarding Thalassemia.*

### **METHODOLOGY**

*A cross-sectional descriptive study was carried out in two tertiary care hospitals in Peshawar from February 2019 to July 2019. Informed consent was taken from 100 participants before data collection. A validated and reliable questionnaire was used as a data collection tool. SPSS version 22.0 was used for data analysis.*

### **RESULTS**

*Out of 100 participants, the majority (n=77) were female. The majority were unemployed and 47 were illiterate. Most of the parents had poor knowledge regarding thalassemia 28% were unaware that patients who have thalassemia are anemic, 89% had the opinion that thalassemia cannot be treated only with medications, 78% had replied to thalassemia cannot be treated with surgery and 56% were not aware that chelation is a treatment modality for thalassemia. The mean knowledge score of the total participants regarding thalassemia was 16.65±2.94.*

### **CONCLUSION**

*Based on findings there is ample need for attention by the government and health care providers to provide education to the masses and must have to launch an awareness campaign about thalassemia. Furthermore, government and health care providers and society may encourage the preventive program to decrease the prevalence of this disease in Pakistan.*

**KEYWORDS:** Knowledge, Parents, Thalassemia, Thalassemic Children

**How to cite this article:**

Naz S, Jan A, Muhammad D, Shabnam. Assessment of Thalassemia Children's Parents' Knowledge Regarding Thalassemia J Farkhanda Inst Nur Pub Health. 2022;2(1): 41-45

**Correspondence**

<sup>1</sup>Sehrish Naz, Lecturer INS, Khyber Medical University  
✉: [Sehrish.ins@kmu.edu.pk](mailto:Sehrish.ins@kmu.edu.pk)

⌚: +92-311-9464648

<sup>2</sup>Charge, Khyber Teaching Hospital

<sup>3</sup>Associate Professor, Khyber Medical University

<sup>4</sup>Demonstrator

### **INTRODUCTION**

Thalassemia is a sum of hereditary disorders characterized by the low level of production or synthesis of one of the globin chains which leads to ineffective erythropoiesis and anemia. Shortness of breath, hemolytic anemia, iron overload, tissue

hypoxia, delayed puberty, dark urine, bone deformities, slowed growth, jaundice, and enlarged spleen, liver and heart all are included in the sign and symptoms of anemia.<sup>1</sup> Around 60000 babies are born each year in the world with thalassemia and 3 per cent of the world's estimated population possesses the genes for beta-thalassemia. High prevalence of Beta-Thalassemia is present in the Indian sub-continent, Far East, Central Asia, Transcaucasia and Mediterranean. The high incidence rate has been seen in South East Asia, Sardina (12%) and Cyprus (14%). With the reference to Pakistan, the carrier rate is 5 to 8% and 5000 children are diagnosed each year with

beta-thalassemia.<sup>2,3</sup> To execute and promote relevant education, knowledge of the masses and attitude toward thalassemia have been assessed by most countries. For example, an education program for Italian-American and non-Italian-Americans is not as effective as Italy's education program having more knowledge about Thalassemia. In Bahrain basic knowledge of the population needs improvement about thalassemia. In Saudi Arabia, knowledge about thalassemia was low and above 50% of the participants had not even heard about the disease. Inadequate knowledge of the basic concepts of thalassemia was demonstrated in those who heard of it.<sup>4</sup> More attention is needed on issues related to knowledge and understanding of the illness, lifelong compliance and adherence to chronic treatment regime and attitudes of patients and family members as well as the quality of interpersonal relationships.<sup>5</sup> Most of the parents were concerned about the well-being of their children and compliance with medication.<sup>6,7</sup> Parents of Thalassemia patients were embarrassed, stressed, strained and scared of their child's future.<sup>8,9</sup> By increasing the thalassemia patients and their caregiver's knowledge, attitude and awareness about the disease and management the complications of thalassemia may be effectively decreased and will impact positively on their quality of life.<sup>10,12</sup> A study conducted in Karachi Pakistan shows, that people have poor knowledge of the disease despite being the population at high risk for Thalassemia. Religious preferences, literacy rate, social factors and cultural boundaries influence the lack of awareness. Psychosocial and cultural issues along with lack of knowledge and awareness act as a hurdle for the prevention.<sup>13</sup> Nevertheless, the level of education plays a remarkable role in the awareness of thalassemia.<sup>14,15,16</sup> Awareness is important in the prevention of thalassemia which is contributed frequently by the parent's educational level.<sup>17,18</sup> the current study aimed to assess the knowledge of parents' having thalassemic children at district Peshawar where there is no study conducted previously to assess the burden of the problem. The results of the current study may be helpful in the awareness campaign about thalassemia and seek evaluation and improvement as compared to previous studies conducted in the region and provide room for future researchers.

## METHODOLOGY

A cross-sectional descriptive study was conducted in two tertiary care hospitals in district Peshawar for a six-month duration (February 2019-July

2019). The target population was parents of thalassemic children. A total of 134 thalassemic children were admitted to both hospitals so by using the Raosoft online sample size calculator a sample of 100 thalassemic children was taken whose parents were there in the hospital for taking care of them. An adopted and previously validated questionnaire with a Cronbach's alpha value of 0.8 was used to collect the data.<sup>19</sup> The questionnaire had two parts; the first part consisted of socio-demographic information of the study participants such as gender, age, sex and marital status etc. while the second part consisted of the questions regarding knowledge assessment about thalassemia. Before data collection consent was obtained from the participants and they were assured that their anonymity to information, privacy and identity would be kept confidential. The study was ethically approved by the ethics committee of the Institute of Nursing Sciences (Khyber medical University) and permission was also taken from the institutional heads of both hospitals. Data analysis was done using SPSS version 22.0. Descriptive statistics i.e. frequency, percentages, mean and standard deviation were applied for all variables of the study.

## RESULTS

Out of 100 participants majority were female. According to the age; 58% were 18-30 years old, and 47% were uneducated. The monthly income of 50% of the participants was below 15000.

**Table 1: Socio-Demographic Information of the Participants**

Characteristics	Frequency	%Age
<b>Gender</b>		
Male	23%	
Female	77%	
<b>Age</b>		
18-30	58%	
31-40	30%	
41-50	07%	
50 and above	05%	
<b>Education</b>		
Illiterate	47%	
Primary level	14%	
Middle level	05%	
Metric level	11%	
Intermediate	23%	
<b>Monthly Income</b>		
5000 to 10000	30%	
10000 to 15000	20%	
15000 to 20000	17%	
20000 to 250000	11%	
25000 and above	22%	

Table: 2 Awareness of Parents Regarding Thalassemia

Questions Regarding Thalassemia	Aware F(%)	Not Aware F(%)
Have you ever heard of Thalassemia?	64(64%)	36(36%)
Individuals, who have Thalassemia major are anemic?	28(28%)	72(72%)
Can a Patient survive if Thalassemia is left untreated?	26(26%)	74(74%)
Can Thalassemia be identified by a blood test?	88(88%)	12(12%)
Inter family marriages may lead to thalassemia?	81(81%)	19(19%)
Can conditions like fainting, fever, anemia, diarrhea, and vomiting worsen Thalassemia major?	85(85%)	15(15%)
Is blood transfusion a treatment modality for Thalassemia?	85(85%)	15(15%)
Individuals, who have Thalassemia major, lead normal lives with appropriate treatment?	58(58%)	42(42%)
Is Thalassemia a disease of the blood?	90(90%)	10(10%)
Can Thalassemia be only treated with medications?	11(11%)	89(89%)
Do both parents need to have Thalassemia minor for the baby to be born with Thalassemia major?	60(60%)	40(40%)
If one parent has Thalassemia minor (is a carrier), the couple has a chance of having a child with Thalassemia disease?	59(59%)	41(41%)
Do you think Thalassemia is preventable?	45(45%)	55(55%)
Thalassemia is a contagious disease (you can catch it like a cold)?	23(23%)	77(77%)
Is chelation a treatment modality for Thalassemia?	44(44%)	56(56%)
Is Thalassemia an inherited disorder?	73(73%)	27(27%)
Would you say that children with Thalassemia major are more likely to develop (transfusion-related reactions, kidney failure and stroke)?	87(87%)	13(13%)
Are there different types of Thalassemia?	64(64%)	36(36%)
Does a person with Thalassemia minor lead a healthy life?	40(40%)	60(60%)
Thalassemia can be treated with surgery?	22(22%)	78(78%)
Is a specific type of food a treatment modality for Thalassemia?	27(27%)	73(73%)
Is bed rest a treatment modality for Thalassemia?	24(24%)	76(76%)
Is there a cure for Thalassemia major?	49(49%)	51(51%)
The problems in thalassemia major are due to iron overload and low blood transfusion?	65(65%)	35(35%)
Does Thalassemia lead to other diseases like diseases of the heart, liver, bones, spleen and lungs?	79(79%)	21(21%)

Table 3: Knowledge Level of the Study Participants

Knowledge Level	F	%Age	Mean	Standard Deviation
Good	69	69%		
Poor	31	31%	16.65	2.94

## DISCUSSION

The prevention of thalassemia depends on awareness, which is frequently affected by the educational level of the guardians.<sup>16</sup> In this study 47% of the participants were illiterate as compared to a study conducted in Rawalpindi Pakistan in which 69% of the study participants were illiterate.<sup>15</sup> Regarding inter-family marriages majority of the caregivers were aware in this study while in a similar study conducted in Kolkata India most of the participants believed that consanguineous marriages have a positive role in thalassemia.<sup>3</sup> In this study, a very little percentage of the study participants were aware that those individuals are anemic who have thalassemia major while a study from Saudi Arabia shows that the study participants knew that thalassemia cause anemia. In this study majority of the participants knew that thalassemia is an inherited disorder as compared to another study.<sup>4</sup> In this study, most of the participants were aware that a treatment modality for thalassemia is blood transfusion and knew about chelation therapy. These findings were consistent with previous studies.<sup>6,10,12</sup> In this study, only the majority of the respondent had heard of thalassemia which is discouraging a figure as compared to a study conducted in Quetta Pakistan which show that (100%) of the participants had heard of thalassemia.<sup>13</sup> In developing countries health services face major challenges due to thalassemia major.<sup>18</sup> In the present study some caregivers were aware of thalassemia and has good results. To some extent, these findings of the study harmonize this study with other studies conducted in Pakistan and other countries in the world. Although the scope of this is limited to only one set-up; and may not provide sufficient evidence about the whole prospects of knowledge regarding thalassemia; even then, has some consistency with other studies being carried out in Pakistan and other parts of the world. Still, there is a need for more elaborate research toward this end; and more variables should have to be researched and analyzed vigorously. If disseminated well it still has some information for the stakeholders to implement certain strategies to enhance the knowledge of parents. So, there is ample need for attention by the government and health care providers. The government must provide quality education to the masses and must have to launch an awareness campaign about thalassemia. Furthermore, it is the responsibility of the government, health care providers and society to encourage the preventive program to decrease the prevalence of this disease in Pakistan.

## LIMITATIONS

This study has some methodological limitations such as non-probability sampling, small sample size, and descriptive level of analysis. These limitations need to be controlled in future research..

## CONCLUSION

The finding of this study shows that more than half of the parents were good knowledge regarding thalassemia while some parents were poor knowledge. This means that overall knowledge about the disease and its likely causes such as inter-family marriages and other variables which are of importance for the family and public to know is insufficient. Based on findings there is ample need for attention by the government and health care providers to provide education to the masses and must have to launch an awareness campaign about thalassemia. Furthermore, government and health care providers and society may encourage the preventive program to decrease the prevalence of this disease in Pakistan.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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### CONTRIBUTORS

1. **Sehrish Naz** - Concept & Design; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval
2. **Anayat Jan** - Concept & Design; Data Acquisition; Drafting Manuscript
3. **Dildar Muhammad** - Data Analysis/Interpretation; Drafting Manuscript; Supervision
4. **Shabnam** - Data Acquisition; Drafting Manuscript; Critical Revision; Final Approval

## VACCINATION STATUS OF CHILDREN (UNDER 5 YEARS) AND PARENT'S PERCEPTIONS IN DISTRICT HANGU, KHYBER PAKHTUNKHWA

Dost Muhammad<sup>1</sup>, Faiz Muhammad<sup>2</sup>, Asghar Khan<sup>3</sup>, Ijaz Arif<sup>4</sup>, Muhammad Saleem<sup>5</sup>, Tahira Sadiq<sup>6</sup>, Khadija Bibi<sup>7</sup>

### **ABSTRACT**

#### **OBJECTIVES**

*The overarching aim of this study was to identify the vaccination status of children under five years of age and parents' perceptions regarding vaccination in district Hangu, Khyber Pakhtunkhwa, Pakistan.*

#### **METHODOLOGY**

*A cross-sectional survey was carried out between April 1, 2017, to May 31, 2017, in Union Council Ganjano Kaley of district Hangu, Khyber Pakhtunkhwa. Ethics approval was obtained from the IRB of District Headquarter hospital, Hangu, Khyber Pakhtunkhwa. The systematic random sampling technique was used to select 100 respondents. Data were collected from the parents of these 100 children through an adapted questionnaire. Descriptive statistics were calculated for the variables using SPSS version 20.*

#### **RESULTS**

*Out of 100 children, 43% were males and 57% were females. Among these, 18% were living in nuclear families while 82% were living in combined families. 77% of participants had immunization cards with them, while 23% had no immunization cards. Most of the mothers were illiterate (88%), while most of the male parents were literate (89%). All the children had been vaccinated for the BCG+ OPV vaccine. Among parents, 47% were influenced by media for vaccination. Most of the parents had positive perceptions regarding vaccination. Regarding immunization status, 80% of children were fully immunized, 19% were partially immunized and 1% were not immunized.*

#### **CONCLUSION**

*The overall immunization coverage rate was satisfactory. Parents showed confidence in the public sector vaccination services. In view of population expansion, more vaccinators need to be employed to achieve effective and sustainable vaccination coverage.*

**KEYWORDS:** Children, Immunization, Pakistan, vaccination

#### **How to cite this article:**

Muhammad D, Muhammad F, Khan A, Arif I, Saleem M, Sadiq T, Bibi K. Vaccination Status of Children (under 5 Years) and Parents Perception in District Hangu, Khyber Pakhtunkhwa. J Farkhanda Inst Nur Pub Health. 2022;2(1): 46-50

#### **Correspondence**

<sup>2</sup>Faiz Muhammad, Principal, Islamia Nursing College & Allied Health Sciences, Peshawar

✉: [faizbangash@gmail.com](mailto:faizbangash@gmail.com)

✉: +92-336-2244088

<sup>1</sup>Data Management Unit Incharge/Focal Person of DHO Hangu, EDO Health Office District Hangu, Pakistan

<sup>3</sup>Principal, Batkhela College of Nursing & Allied Health Sciences, Malakand

<sup>4</sup>Principal, Swat College of Nursing Swat

<sup>5</sup>Principal, Abbottabad College of Nursing & Allied Health Sciences, Abbottabad

<sup>6</sup>Deputy Nursing Superintendent, State College of Nursing Mirpur Azad Jammu & Kashmir

<sup>7</sup>Nurse Supervisor, District Headquarter Hospital Chitral

#### **INTRODUCTION**

World Health Organization (WHO) has estimated that 5.2 million children under 5 years died mostly from preventable and treatable causes, while additional 500,000 children (5 to 9 years) died in 2019.<sup>1</sup> Similarly, Pakistan has the third-highest burden of fetal, maternal, and child mortality while South Asian countries have still high under-five mortality rate, i.e., 51 deaths per 1,000 live births in 2015.<sup>2</sup> Pakistan is one of the three countries where poliomyelitis transmission remains endemic

(WHO, 2012) and immunization coverage surveys suggest that 1 in every 5 children is not immunized while in many rural areas 2 out of 3 children are not immunized<sup>3</sup>. Immunization plays a pivotal role in the prevention of infectious and communicable diseases, and overall, it brings a reduction in childhood morbidity and mortality.<sup>4,5</sup> Childhood immunization coverage has been expanding such as infant immunization coverage of three doses of diphtheria-tetanus-pertussis has improved from 20% to 85% between 1980 to 2019 worldwide.<sup>6</sup> However, despite huge investment in childhood immunization several low and middle-income countries are unable to achieve the universal coverage of routine immunization.<sup>7</sup> In Pakistan the vaccine coverage is inadequate, posing a serious risk to the disease outbreak and associated morbidity and mortality<sup>8</sup>. Globally there are 20 million children who have not received the minimum basic vaccination and only 11% have received the full schedule vaccine recommended by World Health Organization (WHO).<sup>9</sup> Multitude of factors are responsible for this low immunization coverage such as weak health systems, isolated rural areas without easy access to health facilities, urban slums and informal settlements, displaced populations during conflicts and wars, lack of information and misconception of immunization, religious misbeliefs, and illiteracy operations, In addition, distance from (taluka) health facility and misconception of parents was among the main reasons of not getting the children vaccinated.<sup>10,11</sup> Studies have shown that socio-economic characteristics, lack of awareness, difficult access and managerial issues had connection to poor immunization coverage in Pakistan.<sup>12</sup> The Expanded Program on Immunization (EPI) in Pakistan was launched in 1979 after Alma Ata Declaration of „Health for All by 2000; to reduce morbidity and mortality resulting from six EPI targeted diseases (Polio, Diphtheria, Whooping Cough, Tetanus, Measles and Tuberculosis).<sup>13</sup> The awareness towards immunization for vaccine preventable diseases is quite low in the rural areas of Pakistan and as such many children go without these necessary lifesaving vaccinations. It has emerged that Lady Health Workers (LHWs) are instrumental in promoting vaccination and enhance timely vaccination acceptance.<sup>14</sup> In this backdrop, the efforts towards spreading awareness and enlightenment needs to be addressed and workable strategies need to be implemented in order to ensure effective rise in the routine coverage. Limited published studies were found on

vaccination status of children and parents' perceptions, therefore the current study was designed to identify the vaccination status of children, under-five years' age and to assess perceptions of parents regarding vaccination in district Hangu of Khyber Pakhtunkhwa.

## METHODOLOGY

A descriptive cross-sectional study was carried out at Union Council Ganjano Kaley, Hangu from April 1, 2017 to May 31, 2017. The approval for the study was granted by Institutional Review Board (IRB) of District Headquarter Hospital (DHQ) of District Hangu. Written informed consents were obtained from the participants of the study. A sample of 100 children under-five age was selected through Systematic Random Sampling technique. The researcher surveyed every 5th house of the Union Council. All Children (male and female) of less than five years were included in the study. The children whose parents were suffering from psychiatric diseases were excluded from study. An adopted validated questionnaire was utilized for data collection. Questionnaire was divided into two sections; the first part comprised of demographic data (name, age, gender), whereas the second part had questions related to the vaccination status and perceptions of parents regarding vaccination. Data were collected from the parents of the children. Frequencies and percentages were calculated for demographic variables and the responses of the participants on the questionnaire. Statistical Package of social Sciences (SPSS) 20 was used for data analysis.

## RESULTS

Table 1: Socio-demographic Profile of the Participants

Gender	Frequency	Parentage
Male	43	43.0
Female	57	57.0
<b>Family set up</b>		
Nuclear	18	18.0
Combined	82	82.0
<b>Paternal Education Status</b>		
Literate	89	89.0
Illiterate	11	11.0
<b>Maternal Education Status</b>		
Literate	12	12.0
Illiterate	88	88.0
<b>Profession of Guardian/Father</b>		
Labor	18	18.0
Driver	9	9.0
Shopkeeper	10	10.0
Army personnel	19	19.0
Business man	4	4.0
Other	40	40

Table Continue....

**Table 1: Socio-demographic Profile of the Participants**

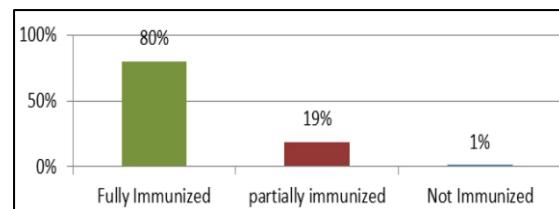
Profession Occupation of Mother		
House Wife	98	98.0
Employee	2	2.0
Status of House		
Owned	91	91.0
Rented	9	9.0
Number of Rooms House		
1-2 rooms	29	29.0
3-4 rooms	23	23.0
more than 4 rooms	48	48.0
Monthly Income		
5-10 thousand	18	18.0
11-20 thousand	48	48.0
21-30 thousand	22	22.0
>30 thousand	12	12.0

**Table 2: Vaccine Status of Children**

	Frequency	Percentage
<b>Do you have vaccine card?</b>		
Yes	77	77.0
No	23	23.0
<b>BCG + OPV</b>		
Yes	100	100.0
No	0	0
<b>If yes do the child have BCG scar</b>		
Yes	99	99.0
No	1	1.0
<b>Pentavalent I+ OPV at 6 weeks of age</b>		
Yes	74	74.0
No	26	26.0
<b>Pentavalent II + OPV at 10 weeks of age</b>		
Yes	70	70.0
No	30	30.0
<b>Pentavalent III + OPV at 14 weeks of age</b>		
Yes	66	66.0
No	33	33.0
Not Applicable	1	1.0
<b>Pneumococcal vaccine 10 at 6 weeks of age</b>		
Yes	62	62.0
No	37	37.0
Not Applicable	1	1.0
<b>Pneumococcal vaccine 10 at 10 weeks of age</b>		
Yes	60	60.0
No	39	39.0
Not Applicable	1	1.0
<b>Pneumococcal vaccine 10 at 14 weeks of age</b>		
Yes	57	57.0
No	41	41.0
Not Applicable	1	1.0
<b>Measles vaccine at 9 months of age</b>		
Yes	50	50.0
No	42	42.0
Not Applicable	6	6.0
<b>The child has up to date vaccine</b>		
Yes	60	60.0
No Valid	40	40.0
<b>Measles booster at 15 months of age</b>		
Yes	50	50.0
No	42	42.0
Not Applicable	8	8.0

**Table 3: Perceptions of Parents Regarding Vaccination**

	Frequency	Percentage
<b>Do you allow your child for giving polio drops to your child during door-to-door polio Campaign</b>		
Yes	99	99.0
No	1	1.0
<b>Do you recommend EPI vaccination to other parents?</b>		
Yes	86	86.0
No	13	13.0
<b>Who influence your decision about vaccinating the children?</b>		
Teacher	7	7.0
Grandparent	14	14.0
Media	47	47.0
Other Source	32	32.0
<b>Does childhood vaccination prevent from infectious diseases?</b>		
Yes	73	73.0
No Valid	8	8.0
Don't Know	19	19.0
<b>Are vaccines harmful for children?</b>		
Yes	3	3.0
No	68	68.0
Don't Know	29	29.0
<b>Free vaccines cause infertility in children?</b>		
Yes	2	2.0
No	21	21.0
Don't Know	76	76.0
<b>Does polio vaccine cause infertility in children?</b>		
Yes	2	2.0
No	22	22.0
Don't Know	76	76.0
<b>Vaccines are provided by America for controlling our population</b>		
Yes	21	21.0
No	53	53.0
Don't Know	26	26.0

**Figure 1: Fully Immunized, Partially Immunized, Not Immunized**

## DISCUSSION

The current study was aimed to identify the vaccination status of children under-five years age and to assess perceptions of parents regarding vaccination. The complete coverage of vaccination of 80% is much satisfactory than reported previously as 61.5% (aged 12 to 23 months) for 2016 and 47% of Pakistan Demographic and Health Survey 2006-07.<sup>15</sup> However, the current finding of coverage is still lower than the required coverage of 90% for 2020.<sup>8</sup> The current higher coverage in a rural settings may be due to better health service facilitation in the area because it is

considered as state of the art of health unit in the area. It may also be concluded that wide variability in the vaccination coverage can make a difference. Therefore, the areas which are closer to Health Unit are more likely to achieve higher coverage of vaccination as compared to the remote area. Distance from the health facility has been previously identified as a major factor for not getting the children vaccinated. There is a need to bridge the gap in supply of adequate vaccines and their utilization at Basic Health Unit (BHU) level.<sup>16</sup> Previously education of parents" especially maternal education has been reported to be significantly associated with vaccination.<sup>17,18</sup> The results of this study revealed that most of the male parents of children were educated which may be a crucial determinant for getting the child vaccinated due to increase awareness and better health seeking behavior. As males are the decision makers according to the local tradition. Paternal education has also been recognized by prior studies in Pakistan as determinant factor for child vaccination.<sup>19</sup> Low socioeconomic status and having a female child have also been previously documented to be associated with non-vaccination.<sup>20</sup> However, there was no difference between male and female children and socioeconomic status had a little bearing on the status of vaccination in this study. This finding suggests awareness on gender discrimination which has improved in rural areas or it does not apply for children under 5 years of age. These findings are consistent to a study from Saudi Arabia, which reported that non-adherence to immunization had no association with sociodemographic factors like age, income, educational level and employment status.<sup>21</sup> Fear of side effects of vaccination has been reported as a barrier to vaccination campaigns. The results of this study suggest that there is still some resistance and misconception about vaccination among the local community. Some people still associate vaccination as a painful and harmful intervention that could be dangerous to the health of their child while others show careless attitude towards importance of vaccination. Health education about the benefits of vaccination should be incorporated in the routine cultural and religious rituals. Mosques, schools and other community gathering places could be used where misconceptions of the communities could be clarified and the resistance can be reduced. This study had limitations like use of self-report questionnaire, small sample size, and was limited to one union council which may affect the generalization of results.

## CONCLUSION

The overall immunization coverage rate was satisfactory in this study. Parents showed confidence in the public sector vaccination campaign and services. It may be desired to hire more vaccinators for optimal immunization coverage. Overall, the coverage of EPI vaccines was more than 70% in this study. There is a need to improve general status of education of rural population, especially of women. The findings also suggest that children living in distant union councils are less likely to be vaccinated. There is a need to organize EPI services at BHU levels to improve access and increase the vaccination coverage.

## ACKNOWLEDGEMENTS

All of the participants, as well as the directors/administrators of the hospitals, are thanked for their assistance and cooperation in completing this study.

## CONFLICT OF INTEREST: None

## FUNDING SOURCES: None

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## CONTRIBUTORS

- Dost Muhammad** - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Supervision; Final Approval
- Faiz Muhammad** - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Supervision; Final Approval
- Asghar Khan** - Concept & Design; Data Analysis/Interpretation; Drafting Manuscript; Supervision; Final Approval
- Ijaz Arif** - Data Analysis/Interpretation; Critical Revision; Supervision; Final Approval
- Muhammad Saleem** - Data Analysis/Interpretation; Critical Revision
- Tahira Sadiq** - Drafting Manuscript; Critical Revision; Supervision
- Khadija Bibi** - Data Acquisition; Data Analysis/Interpretation

## FREQUENCY OF RENAL LITHIASIS AMONG PATIENTS VISITING A TERTIARY CARE PUBLIC SECTOR HOSPITAL IN PESHA WAR, PAKISTAN

Muhammad Ayaz Khan<sup>1</sup>, Sameena Naz<sup>2</sup>, Syed Afzal Shah<sup>3</sup>, Khush Bakht<sup>4</sup>, Suleman Khan<sup>5</sup>

### **ABSTRACT**

### **OBJECTIVES**

*To determine the frequency of renal lithiasis among patients coming to Khyber Teaching Hospital Peshawar.*

### **METHODOLOGY**

*This Observational cross-sectional study was undertaken at Khyber Teaching Hospital Peshawar, period (January 2021 to August 2021). Data were collected through a self-administered questionnaire. Non-probability convenient sampling technique was used to recruit 61 patients. Institutional Review Board approval was obtained prior to data collection. SPSS version 20 was used to analyze data.*

### **RESULTS**

*Out of 160 patients, 61(37.5%) patients were having renal calculi. Among those 61 patients, n=49(80%) were male participants and 12(20%) female participants said that they are having renal calculi. The age of the participants was 12-65years. The proportion of males was approximately higher as compared to the females. Most of the participants have renal calculi at the time of the examination.*

### **CONCLUSION**

*There is a high rate of renal lithiasis in mostly male patients and at young ages. These demographic factors may be potentially associated with the occurrence of renal lithiasis. Further research is required to study these factors in detail in relation to renal lithiasis.*

**KEYWORDS:** Renal lithiasis, Risk factors, renal calculi, public sector Hospitals.

#### **How to cite this article:**

Khan MA, Naz S, Shah SA, Bakht K, Khan S. Frequency of Renal Lithiasis among Patients Visiting a Tertiary Care Public Sector Hospital in Peshawar, Pakistan. J Farkhanda Inst Nur Pub Health. 2022;2(1): 51-54

#### **Correspondence**

<sup>2</sup>Sameena Naz, Principal, Reflex College of Nursing, Peshawar

Email: [saminanaz069@gmail.com](mailto:saminanaz069@gmail.com)

Contact: +92-342-8456448

<sup>1</sup>RN Officer, Khyber Teaching Hospital (MTI), Peshawar

<sup>3</sup>Lecturer, Reflex College of Nursing, Peshawar

<sup>4</sup>RN Officer, Khyber Teaching Hospital (MTI), Peshawar

<sup>5</sup>Technologist, Hayatabad Medical Complex(MTI), Peshawar

### **INTRODUCTION**

Renal lithiasis is a hard, crystal-clear mineral material which is developed within the kidney or urinary tract; it is also called kidney stones/renal calculi. The condition of having kidney stones is termed "nephrolithiasis. Pakistan is situated in the calculi belt district, where a reliably increase rate of urolithiasis has been accounted for.<sup>1</sup> In a healthy

individual, during the residence time of urine in the urinary tract, crystals either do not form or are so small they are eliminated uneventfully the rate of crystal nucleation and growth may become such that the crystals cannot be easily eliminated due to their size.<sup>2</sup> Urine composition factors are important in crystal formation as urine is a metastable liquid containing several coexisting substances that can crystal to generate renal calculi.<sup>3</sup> Currently, it is the third most frequent urological disease after urinary tract infections and prostate problems.<sup>4</sup> Renal lithiasis is a frequent and recurrent disorder that affects 6 to 12% of people during their lifetime.<sup>5</sup> Most renal Calculi (85%) are made of calcium and are frequently associated with an inappropriate control of calcium or phosphate balance that can lead to bone demineralization.<sup>6</sup> Renal calculi are small, often between the extent of a portion of corn

& grain of salt. At the point when our body has excessively of specific minerals and it doesn't have enough fluid, these stones-like objects can form. The calculus can be rough or smooth & brown or yellow. Calculus that are < 5 mm (0.2 in) in diameter can pass spontaneously in 98% of cases, while those which are measuring 5- 10 mm (0.2 - 0.4 in) in diameter can pass spontaneously in < 53% of the cases.<sup>7,8</sup> Stones which are large enough to fill out the renal calyces are called staghorn calculi; these are only formed in presence of urease-forming bacteria. Other forms which can possibly grow to become staghorn calculi are those comprise of uric acid, cystine, & calcium oxalate monohydrate.<sup>9</sup> The most common cause of renal stones is the lack of water in the body. Calculus is more commonly found in individuals who drink less than the recommended eight to ten glasses of water a day. The study of idiopathic calcium oxalate calculus formation demonstrated the initial therapy for prevention of any type of renal calculi recurrence is a high liquid intake to ensure a urine volume of no less than 2 liters every day.<sup>10</sup> Dehydration from the decreased liquid intake is a significant factor in calculus development, Obesity is a chief risk factor as well as increased dietary intake of animal protein.<sup>11</sup> A family history of renal calculi is also a risk factor for the development of renal calculi. In a small number of pregnant women, there may also form renal calculi & there is some proof that the pregnancy-related changes may increase the risk of renal lithiasis. Insights into the magnitude and risk factors of renal lithiasis may be very useful in identifying strategies to prevent and manage them and contribute to the body of knowledge in this area. Therefore, this study aimed to determine the frequency of renal lithiasis among patients coming to Khyber Teaching Hospital Peshawar.

## METHODOLOGY

A descriptive observational design was used to investigate renal lithiasis disease and risk factors in a tertiary care hospital in Peshawar. The study was from January 2021 to August 2021. The sampling technique was non-probability convenient sampling. A total of 160 patients were approached, all the relevant patients belonging to Peshawar and the surrounding area were included in the study. Patients with other diseases and those who were not willing to participate were excluded from the study. The study is authorized by the institutional review committee and written consent was taken from the head of the department of radiology before enrolling samples in our study. Data were

collected from patients in the radiology department of Khyber teaching hospital. The data was collected using a self-structured and well-organized questionnaire related to the study. The data collectors were trained prior to and piloted before actual implementation. Data were analyzed in Excel and different statistical measures were used such as percentages, frequency, ratio and proportions.

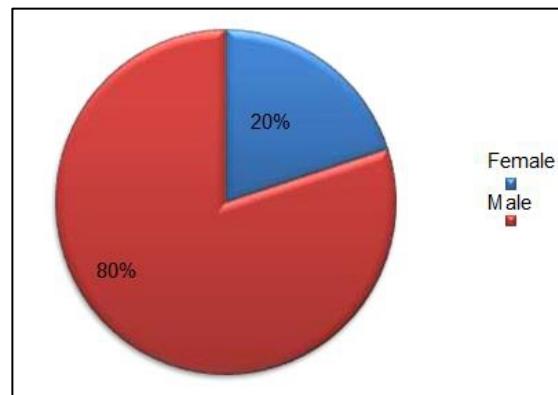
## RESULTS

In this examination over a time of four months, sequential 160 patients with renal stones disease manifestations were considered. Out of 160 patients a total of 61 patients who were having renal calculi. As shown in table 1 age of the participants was 12-65years and most of the participants were from the age group 12-30.

**Table 1: Renal Lithiasis in Patients with Age-Wise Division (n=61)**

Age (Years)	Patients Number	%Age
12-30	32	52.4%
31-45	17	27.8%
46-65	12	19.6%

In patients with renal lithiasis disease, there were dominancy of male. With the proportion of the male patients was 80%(n=49) and the female patients were 20% (n= 12) as shown in figure 1.



**Figure 1: Percentage of Renal Lithiasis in Male & Female Patients (n=61)**

In the majority of patients, the calculi were unilateral either the left or right side while both sides is present only in 24.6%.Detail are given in table 2.

**Table 2: Division of Renal Lithiasis Based on Site (n=61)**

Side	Patients Number	%Age
Unilateral (Left)	23	37.7%
Unilateral (Right)	23	37.7%
Both Sides	15	24.59%

Based on comorbidity patients were found to have diseases such as renal calculi, ureteric calculi, UB (urinary bladder) calculi, renal cysts, renal concretions, and hydronephrosis as shown in table 3.

**Table 3: Renal Lithiasis Patients with other Diseases (n=61)**

Disease	No. of Patients	%Age
Renal Concretions	17	15%
Renal Cysts	16	14%
Hydronephrosis	19	17%

Patients having renal calculi were 47 in number, ureteric calculi were 8, UB calculi were 6 renal cysts were 16 renal concretions were 17, and hydronephrosis was present in 19 patients respectively.

## DISCUSSION

The overall male and female in our study were 1.9:1. Which correlates well with those observed in other studies from Pakistan, which lie in the range of 2.1:1 to 3.8:1.<sup>10,11,23</sup> Same observation was seen in the available literature from Thailand<sup>2,1</sup>. However, it was lower than observed in Arab countries such as Kuwait 9.1 and Saudi Arabia 5.1.<sup>17</sup> The average age of presentation in our study was 33.1 years majority of patients lay in the 12-65 years of age group. The facts were supported by available literature from the USA in which the majority of patients to lie between 20 to 49 years<sup>1</sup> and Peshawar with the major patient population in the 30 to 50 years age group.<sup>18</sup> However, the average age in our study was less than that observed in Karachi was 44 years, Kuwait was 41.91 years and Thailand was 40.3 years.<sup>19,20</sup> Most common presenting complaint was left flank pain followed by bilateral. Similar pattern was observed in studies done in Kuwait, the USA, and Karachi.<sup>20</sup> Modification in urinary PH additionally plays an imperative part in the combination of kidney calculus, on the grounds that in specific calculi, PH is. In struvite calculus, urine stays antacid (alkaline) for a long time & over soaked with particles that advance struvite calculus development. Increased urinary pH (>7) is seen in 20% of patients in this examination. F. Barbey et al made comparable perceptions of increased urinary PH (>7.2) claim for the amalgam of struvite calculus.<sup>7</sup> In this study, 13.2% of cases, had radiological proof of Staghorn calculi. Another has reported 2-3% of staghorn calculi.<sup>11</sup> In 54% of patients there was recurrence (frequency) of the renal lithiasis disease. In 93.4% of patients, calculi were one-sided. In 37.7% of patients, the calculi are unilateral (left) and furthermore 37.7% of the calculi are unilateral (right) and calculi on both sides are present only in 24.6%. So, the observations showed that most of the stones were made in both (the left and right) of the kidney. The study has shown that the most important thing you can do is, to drink enough fluid, mostly water to

prevent renal lithiasis disease formation. There is a high rate of renal lithiasis in mostly male patients. As indicated by the investigation, participants generally knew about Renal Lithiasis Disease prevention. In addition, conducting a comparative examination including the patients of different hospitals in Peshawar will make the findings more particular.

## LIMITATIONS

This study has several methodological limitations such as small a sample size particularly for a descriptive study, non-probability sampling, single-site study and only a descriptive level of analysis. Further research may be conducted by addressing these shortcomings.

## CONCLUSION

Based on this study's findings it may be concluded that renal lithiasis is prevalent in males and in young people. These demographic factors may be potentially associated with the occurrence of renal lithiasis. Further research is required to study these factors in detail in relation to renal lithiasis

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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## CONTRIBUTORS

1. **Muhammad Ayaz Khan** - Drafting Manuscript
2. **Sameena Naz** – Supervision; Final Approval
3. **Syed Afzal Shah** - Data Analysis/Interpretation; Critical Revision
4. **Khush Bakht** - Data Acquisition
5. **Suleman Khan** – Concept & Design

